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No. 189

No. 15132

United States
Court of Appeals
for the Ninth Circuit

Exhibits in Custody of Clerk

MUENCH-KREUZER CANDLE CO., INC., a corporation, Appellant,

vs.

LESTER F. WILSON, Appellee.

Transcript of Record

In Two Volumes

Volume I.

(Pages 1 to 326, inclusive)

Appeal from the United States District Court for the Southern District of California, Central Division

FILED

OCT 24 1956

PAUL P. O'BRIEN, CLERK

No. 15132

United States
Court of Appeals
for the Ninth Circuit

MUENCH-KREUZER CANDLE CO., INC., a corporation, Appellant,

vs.

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[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur.]

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Los Angeles 17, California

For Appellee:

H. CALVIN WHITE,

611 Wilshire Boulevard,
Los Angeles 17, California

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* Page numbers appearing at foot of page of original Transcript of Record.

In the United States District Court, Southern District of California, Central Division

Civil Action No. 15273-WM

LESTER F. WILSON, Plaintiff,

vs.

MUENCH-KREUZER CANDLE CO., INC., a corporation, and EMKAY CANDLE CO., INC. a corporation, Defendants.

COMPLAINT FOR INFRINGEMENT OF LETTERS PATENT

Comes Now the Plaintiff, Lester F. Wilson, and for cause of action against the defendants alleges:

I.

Plaintiff is a citizen of the State of California and resides in San Gabriel, in the County of Los Angeles, State of California.

II.

Defendants, Muench-Kreuzer Candle Co., Inc., and Emkay Candle Co., Inc., according to plaintiff's information and belief, are corporations organized and existing under and by virtue of the laws of the State of New York, and have their principal places of business in the city of Syracuse, State of New York; defendants have [2] a regular and established place of business within the Southern Judicial District of California, Central Div-

ison, at 311 East Commercial Street, Los Angeles, California.

III.

This Court has jurisdiction herein because plaintiff's cause of action arises under the patent laws of the United States.

IV.

On March 15, 1949, United States Letters Patent No. 2,464,361 were duly and legally issued to plaintiff for a certain invention entitled "Drip Candle", and since that date plaintiff has been and still is the owner of the entire right, title and interest in and to said Letters Patent.

V.

Defendants, within the jurisdiction of this Court and elsewhere in the United States, have continuously infringed and are now infringing the aforesaid Letters Patent, by selling and offering for sale within said jurisdiction the product patented in and by said Letters Patent, and by both making and selling said product elsewhere in the United States, and will continue to do so unless enjoined by this Court.

VI.

Plaintiff has placed the required statutory notice on its product manufactured and sold under said Letters Patent.

VII.

Plaintiff has given written notices to defendants of the infringement as aforesaid, and defendants

have wilfully continued the infringement in disregard of such notices.

Wherefore, Plaintiff now petitions this Court for the following relief against defendants:

1. A preliminary and final injunction against further infringement of said Letters Patent by defendants, their agents, [3] employees and all others controlled by defendants;

2. An accounting for profits and the award of treble damages by reason of the wilfullness of the infringement;

3. An assessment of costs and attorney's fees; and

4. Such other and further relief as this Court may determine to be just.

LESTER F. WILSON,
/s/ By WILLIAM P. GREEN,
H. CALVIN WHITE,
WILLIAM P. GREEN,
Attorneys for Plaintiff [4]

[Endorsed]: Filed March 6, 1953.

[Title of District Court and Cause.]

ANSWER

The defendant, Muench-Kreuzer Candle Co., Inc., answering the complaint herein states, that:

1. Defendant is not informed save by the complaint as to the matters set for in Paragraph I

of the complaint and, therefore, denies the allegations therein contained.

2. Defendant admits the allegations contained in Paragraph II of the complaint as to the Muench-Kreuzer Candle Co., Inc., and denies said allegations as to the Emkay Candle Co., Inc.

3. Defendant admits the allegations contained in Paragraph III of the complaint.

4. Defendant is not informed save by the complaint as to the matters set forth in Paragraph IV of the complaint and, therefore, denies the allegations therein contained.

5. Defendant denies each and every allegation contained [5] in Paragraph V of the complaint.

6. Defendant is not informed save by the complaint as to the matters set forth in Paragraph VI of the compliant and, therefore, denies the allegations therein contained.

7. Defendant admits the allegation contained in Paragraph VII of the complaint that plaintiff has given written notice of infringement to defendant, and denies the remaining allegation therein contained.

8. Defendant, upon information and belief, avers that United States Letters Patent No. 2,464,361 are invalid and void because the alleged inventor named therein was not the original and first inventor of the alleged improvement described and claimed therein, but the same, in all of its material and substantial parts, was invented, known and used by others in this country before his alleged invention of discovery thereof; was patented and described

in printed publications in this and foreign countries before his alleged invention or discovery thereof, or more than one year prior to his application for patent; and was in public use and on sale in this country more than one year prior to this application for patent.

(a) The patents and publications above referred to, in so far as they have at present been ascertained, are as follows:

United States Patents

Patent No. 1,596,017; inventor Harnisch; issue date August 17, 1926.

Patent No. 1,608,518; inventor Minrath; issue date November 30, 1926.

Patent No. 1,701,844; inventor Funke; issue date February 12, 1929.

Patent No. 1,908,044; inventor Nelson; issue date May 9, 1933.

Patent No. 2,184,666; inventor Fredericks; issue date December 26, 1939.

Patent No. 2,196,509; inventor Turner; issue date April 9, 1940. [6]

Foreign Patents

Patent No. 95; country (inventor) Great Britain (Sterry); date 1871.

Patent No. 3478; county (inventor) Great Britain (Ascough); date 1871.

Patent No. 5902; country (inventor) Great Britain (Smith) date 1897.

Patent No. 157,209; country (inventor) Germany; date December 28, 1904.

Publications

Emkay (Muench-Kreuzer) Catalog No. 50, July 1, 1941, p. 10 (Received in Division 30, U. S. Patent Office, January 14, 1943, Class 67, sub-class 22.5x).

(b) The instances of prior invention, knowledge, use and sale above referred to, in so far as they have at present been ascertained, are as follows: By the patentees of the patents cited in sub-paragraph (a) above, and this defendant as shown in the catalog publication cited in sub-paragraph (a) above, in this and foreign countries.

(c) Defendant begs leave to add hereto by amendment to this answer additional patents and publications and instances of prior invention, knowledge use and sale, above referred to, which it is at present unable to supply. [7]

9. Defendant, upon information and belief, avers that by reason of the proceedings in the United States Patent Office during the prosecution of the application which resulted in said Letters Patent No. 2,464,361, and the admissions and representations therein made by or in behalf of the alleged inventor in order to induce the grant of said Letters Patent, the plaintiff is estopped to claim for said Letters Patent a construction, were the same otherwise possible, as would cause said Letters Patent to cover or include any device or apparatus manufactured, used or sold by the defendant.

10. Defendant, upon information and belief,

avers that said Letters Patent No. 2,464,361 are invalid and void because the alleged improvement described and claimed therein did not constitute patentable subject matter within the meaning of the Patent Laws, in view of the prior state of the art and what was common knowledge on the part of those skilled in the art; all prior to the date of the alleged invention thereof by the patentee named therein. [8]

Wherefore, the defendant denies that the plaintiff is entitled to the relief prayed for in said complaint, or to any relief, and prays to be hence dismissed with its costs in this cause sustained, and for such other and further relief as to the Court may seem just and proper.

MUENCH-KREUZER CANDLE CO., INC.,
By LYON & LYON,
/s/ By CHARLES G. LYON,
Attorneys for Defendant

Of Counsel for Defendant:

/s/ D. Emmett Thompson
/s/ Richard von K. Bruns [9]

Acknowledgment of Service attached. [10]

[Endorsed]: Filed April 8, 1953.

[Title of District Court and Cause.]

STIPULATION

It Is Stipulated by and between the parties hereto through their respective counsel that the Answer may be deemed amended by the adding to paragraph 8(a) thereof the following prior art patent:

Patent No. 122, Great Britain (Fields), 1871.

/s/ H. CALVIN WHITE,
Attorney for Plaintiff

LYON & LYON,
/s/ By CHARLES G. LYON,
Attorneys for Defendants

It Is So Ordered this 26 day of October, 1953.

/s/ PEIRSON M. HALL,
United States District Judge [11]

[Endorsed]: Filed October 26, 1953.

In the United States District Court, Southern District of California, Central Division

Civil Action No. 15,273-PH

LESTER F. WILSON, Plaintiff,

vs.

MUENCH-KREUZER CANDLE CO., INC., a corporation, et al., Defendant.

FINDINGS OF FACT AND CONCLUSIONS OF LAW AND JUDGMENT

The above-entitled Action having come on for trial before this Court, and the Court having heard and considered testimony of the witnesses produced on behalf of the respective parties and having considered the exhibits offered in evidence on behalf of the respective parties, and having on March 16, 1956 rendered orally the decision of the Court at the conclusion of the trial, the Court now makes the following Findings of Fact and Conclusions of Law pursuant to Rule 52 of the Federal Rules of Civil Procedure:

Findings of Fact

1. The plaintiff Lester F. Wilson, an individual and the inventor named in the patent in suit, is a resident of San Gabriel, in the County of Los Angeles, State of California.

2. The defendant Muench-Kreuzer Candle Co., Inc., is a corporation organized and existing under and by virtue of the laws of the State of New York

and has its principal place of business in the city of Syracuse, State of New York. This [41] defendant has a regular and established place of business within the Southern judicial district of California, in the City of Los Angeles, State of California.

3. The named defendant Emkay Candle Co., Inc., allegedly a corporation, was not served with the Complaint herein, and the Action has been dismissed as to the alleged defendant Emkay Candle Co., Inc.

4. This Action was instituted by the plaintiff Lester F. Wilson against the defendant Muench-Kreuzer Candle Co., Inc. (hereinafter referred to as defendant) for infringement of United States Letters Patent 2,464,361 granted March 15, 1949 on an application filed March 13, 1945, entitled "Drip Candle", hereinafter referred to as the Wilson patent; such Action being brought under the patent laws of the United States and seeking an injunction, accounting for profits and an award of damages.

5. All the claims, 1 to 6, of the Wilson patent are alleged to be infringed. Defendant answered, alleging as defenses non-infringement, invalidity of the claims in the Wilson patent, and file wrapper estoppel. After answering, defendant in its "Defendants' Statement of Issues Involved" of record in this Action, stated:

"From May 17, 1949 to September 5, 1952, defendant manufactured candles with different aniline dyes impregnated in the wick. Infringement by this candle will not be contested."

"Since September 5, 1952 defendants' candles have not had dyes in the wick. Infringement by this candle is in issue".

"This issue involves: Scope of claims, File wrapper estoppel, Limitations imposed by prior art."

6. The plaintiff Lester F. Wilson is and has been the owner of the Wilson patent.

7. Defendant's Vice-President and sole witness Norbert C. H. Muench testified to having received a copy of the Wilson patent from one Carl T. Bolen by transmittal letter dated February 28, 1949. Defendant subsequently was notified of its infringement of the Wilson patent by letter written by plaintiff's attorney dated April 26, 1950.

8. At the trial, defendant relied upon the following prior patents and publications.

United States Patents

Patent No. 1,596,017; inventor Harnisch; issue date August 17, 1926.

Patent No. 1,608,518; inventor Minrath; issue date November 30, 1926.

Patent No. 1,701,844; inventor Funke; issue date February 12, 1929.

Patent No. 1,908,044; inventor Nelson; issue date May 9, 1933.

Patent No. 2,184,666; inventor Fredericks; issue date December 26, 1939.

Patent No. 2,196,509; inventor Turner; issue date April 9, 1940.

Foreign Patents

Patent No. 95; country Great Britain; inventor Sterry; issue date 1871.

Patent No. 3478; country Great Britain; inventor Ascough; issue date 1871.

Patent No. 122; country Great Britain; inventor Fields; issue date 1871.

Patent 5902; country Great Britain; inventor Smith; issue date 1897.

Patent No. 157,209; country Germany; issue date December 28, 1904.

9. The Wilson patent relates to a novel drip candle, so characterized by its formation of wax drippings as the candle burns, which produces during burning and in an unpredictable sequence by reason of the concealment of different coloring materials in the candle, a succession of distinctly and differently colored drippings resulting from the melting of at least a portion [23] of the candle body wax and its acquisition of successively different colors which said portion of the wax would not have before melting. The Court finds this candle to be unique in the candle making art.

10. Defendant admits having had no knowledge of the manufacture or sale of any candle as defined in the preceding Finding 9 prior to the making of defendant's "Make-A-Rainbow" candle, or prior to March 13, 1945, the filing date of the application for the Wilson patent.

11. From May 17, 1949 to and including September 5, 1952, defendant manufactured and sold under the trademark "Make-A-Rainbow", candles which were provided with cotton wicks to which were applied different colored wax, colored by wax-soluble aniline dyes, disposed successively on dif-

ferent portions of the wick along its length, the candles being finished from such prepared wicks by dipping in white wax to candle size. Infringement of the Wilson patent by those candles so made from May 17, 1949 to September 5, 1952, is admitted by defendant.

That candle was discontinued by defendant September 5, 1952, and since that date defendant's candles have been manufactured by first dipping a wick to form a thin white wax taper of substantially ¼ inch thickness upon which there is then painted in successive spaced portions molten wax containing aniline dyes of different colors. The candle is then finished by further dipping to produce a finished candle of about 1 inch maximum diameter, having the colored wax portions covered and concealed within the uncolored wax. The last mentioned candles have been sold under the trademark "Make-A-Rainbow" from September 5, 1952 to date.

Defendant's "Make-A-Rainbow" candles have been sold by it within the jurisdiction of this Court following notice to defendant of the Wilson patent.

12. At the trial defendant produced, demonstrated by burning, and the Court observed candles allegedly made in accordance [24] with the disclosures in the patents and publications listed above in Finding No. 8. Among these prior patents defendant made particular reliance upon the United States patents to Funke, Nelson and Fredericks, which had for their primary objectives the making of candles which upon burning would have their

flames colored by materials such as metal salts contained within the candles, and particularly applied to the candle wicks.

13. None of the prior patents or publications relied upon by defendant refers to a drip candle, or reveals any contemplation of making a candle which characteristically is of a wax dripping type.

14. It follows therefore that none of the prior patents or publications relied upon by the defendant contains any teaching of a multi-color drip candle which upon burning will produce successively differently colored drippings in the manner taught by the Wilson patent.

15. The defendant's candle exhibits allegedly following the teachings of Funke, Nelson and Fredericks were inoperative to produce coloring of their flames upon burning, as the patentees represented that the flames would be colored.

16. Flame coloring candles according to the teachings of Funke, Nelson and Fredericks were not known by defendant to have been sold on any market prior to the filing of the Wilson patent application.

17. Plaintiff commenced manufacture and sale to customers in various parts of the United States, including the Western states, of his "Magi-Color" candles made in accordance with the Wilson patent, and in a manner similar to defendant's first "Make-A-Rainbow" candles, within a month following the filing of the application for the Wilson patent.

18. In the burning of defendant's "Make-A-

Rainbow" candle manufactured since September 5, 1952, the dyes applied to [25] the wax taper dissolve in the candle drippings as they are formed, in essentially the same manner as the drippings were colored in defendant's first manufactured "Make-A-Rainbow" candles in which the colored wax was applied directly to the wick.

19. Defendant purposely renders its "Make-A-Rainbow" candles capable of profusely dripping by the use of a smaller wick, (9 ply and similar to the wick size employed in plaintiff's "Magi-Color" drip candles) than is used by candle manufacturers in general, and including defendant, in candles which are not made especially to drip.

20. The Court further finds that suit was field on December 5, 1949 in the United States District Court, for the Eastern District of Wisconsin, by Plaintiff for infringement of the Wilson patent, against Victrylite Candle Company of Oshkosh, State of Wisconsin, in an Action 6354 entitled "Complaint for Infringement of Patent", which suit after answer by the defendant therein, was concluded by consent decree dated May 5, 1950, holding the Wilson patent valid and infringed; and the Court further finds that plaintiff granted to the said Victrylite Candle Company, by agreement dated April 18, 1950, a license, the granting clause in which reads:

"Reserving in himself, his successors and assigns a single and indivisible right of manufacture, use and sale of candles embodying the invention of said

patent, Licensor hereby grants to Licensee an otherwise exclusive license under said patent limited, however, to the manufacture, use and sale of candles having dyed cores as distinguished from dyed wicks and comprising at different points axially of the candle at least two different core colors."

Conclusions of Law

1. This Court has jurisdiction of the parties and of the subject matter.

2. Claims 1 to 6, and each of them, are good and valid in law, and all have been infringed by defendant by the manufacture and sale of its "Make-A-Rainbow" candles prior to September 5, 1952. Defendant's "Make-A-Rainbow" candles sold since September 5, 1952, in their condition as manufactured with dyes only at the surfaces of the tapers, infringe only claim 1 of the Wilson patent.

3. Examination of the file history of the Wilson patent application reveals no estoppel against plaintiff's assertion of validity and infringement.

4. The prior art relied upon by defendant does not support defendant's contentions of invalidity in view of the rules and laws as laid down in J. A. Mohr & Sons vs. Alliance Securities Co.; Standard Oil Company vs. Same (Ninth Circuit Court of Appeals 1926), 14 F.2d 799; Flakice Corporation vs. Liquid Freeze Corp., 130 F.Supp. 471 (D.C. N.D. Cal., 1955); Dewey & Almy Chemical Company, et al vs. Mimex Company, Inc. (Second Circuit Court of Appeals) 124 F.(2d) 986.

5. Victrylite Candle Company is neither a necessary nor indispensible party in this Action.

6. Plaintiff is entitled to an injunction and an accounting [27] for profits and damages by reason of defendant's infringement.

7. Each party shall bear its own costs herein.

In accordance with the findings of fact and conclusions of law, it is ordered, adjudged and decreed:

Judgment

1. The Wilson patent in suit No. 2,464,361, and all the claims thereof are good and valid in law, and have been infringed by defendant.

2. An accounting shall be had and is hereby ordered of the total infringing candles manufactured by defendant.

3. Failing agreement by plaintiff and defendant as to the manner of making and rendering the accounting, the sufficiency of the accounting, and compensation due plaintiff by reason of defendant's infringement, plaintiff may apply to the Court for an order directive of the accounting and basis of compensation to plaintiff, to be followed and applied.

4. Effective as of April 30, 1956, defendant, its officers, agents, servants and employees, are hereby enjoined from manufacturing or selling or offering for sale in the United States and its territories, its multi-color "Make-A-Rainbow" drip candles as manufactured in the past, and any other

similar candles which infringe any of the claims in the Wilson patent 2,464,361.

Dated this 12 day of April, 1956.

/s/ PEIRSON M. HALL,
United States District Judge

Acknowledgment of Service attached. [28]

[Endorsed]: Lodged April 2, 1956. Filed April 13, 1956. Entered April 16, 1956.

[Title of District Court and Cause.]

NOTICE OF APPEAL

Notice is given that Muench-Kreuzer Candle Co., Inc., hereby appeals to the Court of Appeals for the Ninth Circuit from the judgment entered in this action on April 16, 1956.

Dated this 19th day of April, 1956.

/s/ By CHARLES G. LYON,
Attorneys for Defendant [50]

Affidavit of Service attached. [51]

[Endorsed]: Filed April 19, 1956.

[Title of District Court and Cause.]

BOND FOR COSTS ON APPEAL

Know All Men By These Presents, that American Bonding Company of Baltimore, a corporation organized and existing under the laws of the State of Maryland, and duly licensed to transact business in the State of California, is held and firmly bound unto Lester F. Wilson, Plaintiff in the above entitled case, in the penal sum of Two Hundred Fifty and No/100 ($250.00) Dollars, to be paid to said Plaintiff, his successors, assigns or legal representatives, for which payment well and truly to be made, the American Bonding Company of Baltimore binds itself, its successors and assigns firmly by these presents.

The Condition of the Above Obligation Is Such, that whereas, Muench-Kreuzer Candle Co., Inc., Defendant, is about to take an appeal to the United States Circuit Court of Appeals for the Ninth Circuit to reverse an interlocutory judgment rendered on the 16th day of April, 1956, by the District Court of the United States of the Southern District of California, Central Division, in the above entitled cause granting judgment thereon in favor of the plaintiff [53] as in said interlocutory judgment as set forth.

Now, Therefore, the condition of the above obligation is such that if Muench-Kreuzer Candle Co., Inc., Defendant and Appellant shall prosecute their said appeal to effect and answer all costs

which may be adjudged against them if they fail to make good their appeal, then this obligation shall be void; otherwise to remain in full force and effect.

It Is Further Agreed by the Surety, that in case of default or contumacy on the part of the Principal or Surety, the Court may, upon notice to them of not less than ten days, proceed summarily and render judgment against them, or either of them in accordance with their obligation and award execution thereon.

AMERICAN BONDING COMPANY
OF BALTIMORE,
/s/ By CARL HANNEMAN,
Attorney-in-Fact

Examined and recommended for approval as provided in Rule 8.

/s/ CHARLES G. LYON,
Attorney

Approved this 23 day of April, 1956.

/s/ PEIRSON M. HALL,
Judge

Notary Public Certificate attached. [54]

[Endorsed]: Filed April 23, 1956.

[Title of District Court and Cause.]

SUPERSEDEAS UNDERTAKING

Know All Men By These Presents, that American Bonding Company of Baltimore, a corporation duly organized and doing business under and by virtue of the laws of the State of California and duly qualified for the purpose of making, guaranteeing or becoming surety upon bonds or undertakings required or authorized by the laws of the United States of America, as Surety, is held and firmly bound unto Lester F. Wilson in the penal sum of Fjve Thousand and No/100 Dollars ($5,000.00) to be paid to the said Lester F. Wilson, his heirs and assigns, for which payment well and truly to be made the American Bonding Company of Baltimore binds itself, its successors and assigns firmly by these presents.

Signed, Sealed and Dated this 19th day of April, 1956.

The Condition of the Above Obligation Is Such, that whereas Mutench-Kreuzer Candie Co., Inc., Defendant in the above entitled suit, has or is about to take an appeal to the United States Circuit Court of Appeals for the Ninth District, to reverse an interlocutory judgment rendered on the 16th day of April, 1956, by the United [55] States District Court, for the Southern District of California, Central Division, in the above entitled cause as in said interlocutory judgment set forth.

Now, Therefore, in consideration of the prem-

ises, and of such appeal, if the said Defendant and Appellant shall prosecute his appeal to effect, and answer all damages and costs if he fails to make his plea good, then the above obligation to be void; else to remain in full force and virtue.

It Is Further Agreed by the Surety that in case of default or contumacy on the part of the Principal or Surety, the Court may, upon notice to them of not less than ten days, proceed summarily and render judgment against them, or either of them, in accordance with their obligation and award execution thereon.

AMERICAN BONDING COMPANY
OF BALTIMORE,
/s/ By CARL HANNEMAN,
Attorney-in-Fact

Examined and recommended for approval as provided in Rule 8.

/s/ CHARLES G. LYON,
Attorney

Approved this 23 day of April, 1956.

/s/ PEIRSON M. HALL,
Judge

Notary Public Certificate attached. [56]

[Endorsed]: Filed April 23, 1956.

[Title of District Court and Cause.]

CERTIFICATE OF CLERK

I, John A. Childress, Clerk of the United States District Court for the Southern District of California, do hereby certify that the foregoing pages numbered 1 to 58, inclusive, contains the original

Complaint;

Answer;

Stipulation;

Plaintiffs' Interrogatories;

Defendant's Answers to Interrogatories;

Defendant's Objections to Plaintiff's Findings of Fact;

Findings of Fact and Conclusions of Law and Judgment;

Amendment to Findings of Fact and Conclusions of Law and Final Judgment;

Notice of Appeal;

Order Granting Supersedeas;

Designation of Record on Appeal;

which, together with a full, true and correct copy of Bond for Costs on Appeal, Supersedeas Undertaking; and plaintiff's exhibits 1 through 18I, inclusive (38) and defendant's exhibits a through j, inclusive and N through Q, inclusive (20) and four volumes Reporter's Transcript, constitute the transcript of record on appeal to the United States Court of Appeals for the Ninth Circuit, in the above case.

I further certify that my fees for preparing the foregoing transcript amount to $2.00, which sum has been paid by appellant.

Witness my hand and the seal of said District Court this 17th day of May, 1956.

[Seal] JOHN A. CHILDRESS,
Clerk
/s/ By CHARLES E. JONES,
Clerk

In the United States District Court, Southern District of California, Central Division

Civil Case No. 15,273-PH

LESTER F. WILSON, Plaintiff,

vs.

MUENCH-KREUZER CANDLE COMPANY, et al., Defendants.

TRANSCRIPT OF PROCEEDINGS

Los Angeles, California, Wednesday March 21, 1956.

Appearances: For the Plaintiff: H. Calvin White, 611 Wilshire Blvd., Los Angeles, Calif. For the Defendants: Lyon & Lyon, by Charles G. Lyon, 811 West Seventh St., Los Angeles, Calif., E. L. Martin, 811 West Seventh St., Los Angeles, Calif. [1*]

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* Page numbers appearing at foot of page of original Reporter's Transcript of Record.

The Court: Ex parte?

The Clerk: Yes, your Honor.

(Other court matters.)

The Court: Wilson v. Muench Kruezer Candle Company and Emkay.

For the plaintiff, Mr. White?

Mr. White: H. Calvin White.

The Court: And do you have an associate?

Mr. White: No, your Honor.

The Court: Very well.

For the defendants Lyon & Lyon?

Mr. Lyon: Charles Lyon and Earl Martin.

The Court: Very well.

Do you have an opening statement?

Mr. White: Yes, your Honor.

Mr. Lyon: Before the opening statement, may we make some stipulations of record?

The Court: Yes.

Mr. Lyon: I believe it is stipulated by and between the parties that a transcript will be provided for the court's use, one-half to be paid by each party, the cost of the original transcript to be an item of cost for the prevailing party. [4]

Is it so stipulated?

Mr. White: So stipulated.

The Court: Very well.

Mr. Lyon: We also stipulate to the use of soft copies of patents and publications.

The Court: Soft?

Mr. Lyon: Uncertified copies.

The Court: So Stipulated?

Mr. White: So stipulated.

The Court: Very well.

Mr. Lyon: Before Mr. White makes his opening statement, I wish to call to the court's attention one issue in this case that I am not going to press but I am going to save.

The evidence in this case would show that there is an outstanding so-called exclusive license to the Victrylite Candle Company.

The Court: To whom?

Mr. Lyon: To the Victrylite Candle Company.

The Court: Yes?

Mr. Lyon: The Victrylite Candle Company may or may not—I think it is—be a necessary and indispensable party-plaintiff, and has not been joined in this action.

Of course Mr. White disagrees with me on that. But that is a point which I am saving in the case.

The Court: Mr. White? [5]

Mr. White: In connection with that observation, plaintiff takes the position that if the defendant is to make a defense of the plaintiff's relationship with Victrylite, it is something for it to prove in this proceeding and not to merely save.

It might convenience the order of our proceedings, your Honor, if I were to have marked for identification a series of exhibits. Would that meet with your approval at this time?

The Court: Very well. Sure.

Mr. White: The clerk now has for identification as Plaintiff's Exhibit 1 a soft copy of the Wilson patent in suit, 2,464,361, granted March 15,

1949, on drip candle. Does your Honor have a soft copy of that patent?

The Court: Yes. It is marked Exhibit 1.

Mr. Lyon: Excuse me. If I may interrupt at this time. We have provided for the court's use——

The Court: And Exhibit 2 is the file wrapper on that?

Mr. White: The file wrapper.

The Court: It may be introduced.

Mr. Lyon: Surely.

If your Honor cares to, we have a copy of a book of the prior patents relied on, an extra copy, which I have handed to you for your own use, which you can mark up or do whatever you care to. [6]

The Court: It will be marked Exhibit A. 1, 2, and A are received in evidence..

(The exhibits referred to were received in evidence and marked as Plaintiff's Exhibits 1 and 2, and Defendant's Exhibit A.)

(Plaintiff's Exhibit 1 and Defendant's Exhibit A are set out in the Book of Exhibits.)

The Clerk: Do you have a list of your exhibits, Mr. White?

Mr. White: No, I haven't a list.

The next exhibit, No. 3, is a box containing one candle and bearing the label marking Magi-Color, with the patent marking, and at the bottom "Orange Lite, San Gabriel, California."

The Court: In evidence.

(The exhibit referred to was received in evidence and marked as Plaintiff's Exhibit No. 3.)

Mr. White: Throughout I will endeavor to give defendant one each of these exhibits.

Exhibit 4 is a box containing three candles bearing the label Magi-Color Drip Candle.

The Court: 4 is admitted.

(The exhibit referred to was received in evidence and marked as Plaintiff's Exhibit No. 4.)

Mr. White: Exhibit 5 is a copy of a document which is captioned License Agreement, between Lester F. Wilson and Victrylite Candle Company. I have the original of that [7] agreement, which I propose to allow Mr. Lyon to——

Mr. Lyon: We will stipulate you can use a copy, subject to any corrections, if any appear necessary.

Mr. White: Thank you.

The Court: Admitted.

(The document referred to was received in evidence and marked as Plaintiff's Exhibit No. 5.)

[See Book of Exhibits.] [8]

Mr. White: Exhibit 6 is a typewritten tabulation under the heading "Orange Lite, Lester F. Wilson, Victrylite Royalties."

The Court: That is a tabulation of royalties?

Mr. White: Yes, your Honor.

Mr. Lyon: Let us reserve ruling on that, if your Honor please. I may have some questions on that.

The Court: It will be marked for identification.

(The document referred to was marked Plaintiff's Exhibit No. 6 for identification.)

Mr. White: Exhibit 7 I represent to be a certified copy of a complaint for infringement of the

patent in this action filed in the United States District Court for the Eastern District of Wisconsin, Civil Action 4904, Lester F. Wilson, plaintiff, v. Victrylite Candle Company, defendant.

The Court: What date?

Mr. White: Filed December 5, 1949.

Mr. Lyon: I question the materiality of that.

Mr. White: It may be just marked for identification for the time being.

The Court: It will be marked for identification.

(The document referred to was marked Plaintiff's Exhibit No. 7 for identification.)

Mr. White: Exhibit 8 I offer for identification, this being a certified copy of the defendant's [9] answer in the same action, Wilson v. Victrylite.

The Court: The defendant in that action?

Mr. White: In that action; yes, your Honor.

The Court: The defendant Victrylite?

Mr. White: That is right.

The Court: Very Well.

(The document referred to was marked Plaintiff's Exhibit No. 8 for identification.)

Mr. White: Next I offer for identification as Exhibit 9 a certified copy of final judgment in the action of Wilson v. Victrylite Candle Company.

(The document referred to was marked Plaintiff's Exhibit No. 9 for identification.)

Mr. White: Exhibit 10 I offer in evidence, the same being a copy of a registered letter written by me April 26, 1950, to the Muench Kruezer Candle Company, Syracuse, New York, the defendant in this action.

The Court: What was the date of that again, please?

Mr. White: April 26, 1950.

Any objection, counsel?

The Court: Exhibits 7, 8 and 9 are marked for identification; Exhibit 10 is admitted.

(The document referred to was received in evidence and marked Plaintiff's Exhibit No. 10.)

[See Book of Exhibits.]

Mr. White: I would offer as Exhibit 11 a [10] copy of a letter dated May 3, 1950, addressed to me and signed by Mr. Norbert C. H. Muench.

The Clerk: Is No. 11 admitted?

The Court: No. 11 is admitted.

(The document referred to was received in evidence and marked Plaintiff's Exhibit No. 11.)

[See Book of Exhibits.]

Mr. Lyon: So the record may be clear, the gentleman referred to is seated on my right.

The Court: One of the defendants, or an officer of the defendant?

Mr. Lyon: Vice president.

The Court: Very well.

Mr. White: I offer next in evidence a box containing two candles; the box carrying the wording "Make-a-Rainbow, self-coloring candles," and at the bottom "Emkay Candles."

The Court: Are these the defendant's candles?

Mr. White: I represent that they are.

Mr. Lyon: Yes, sir.

The Court: It is a box of the defendant's candles?

Mr. White: Yes.

The Clerk: Admitted, your Honor?

The Court: Admitted.

(The exhibit referred to was received in evidence and marked Plaintiff's Exhibit No. 12.) [11]

Mr. White: I next offer as Exhibit 13 a box of defendant's candles, containing two candles, the box carrying the word "Deluxe Make-a-Rainbow Self-Coloring Candles."

The Court: 13 is admitted.

(The exhibit referred to was received in evidence and marked as Plaintiff's Exhibit No. 13.)

Mr. White: I next offer as Exhibit 14 a box of defendant's candles, the box containing three candles and carrying the wording "Emkay Wedge-Grip Hand Dipped."

The Court: Admitted, 14.

(The exhibit referred to was received in evidence and marked as Plaintiff's Exhibit No. 14.)

Mr. Lyon: These are not Make-a-Rainbow candles; is that right?

Mr. White: Those are not Make-a-Rainbow candles. Those are what I understand to be conventional candles.

I next offer for identification as Exhibit 15 a typewritten tabulation of candle sales under the letterhead Orange Lite, San Gabriel, California.

The Court: Is there any objection? Admitted.

Mr. Lyon: If you will represent that these were taken from the original records, I have no objection.

Mr. White: I so represent.

Mr. Lyon: All right.

The Court: Admitted. [12]

(The document referred to was received in evidence and marked as Plaintiff's Exhibit No. 15.)

[See Book of Exhibits.]

Mr. White: I next offer as Exhibit 16 one of the defendant's catalogs, No. 83, captioned on the cover page, "A Candle Wonderland," and it will be referred to by plaintiff in relation to pages 3 and the back of the catalog.

The Clerk: Is that admitted, your Honor?

The Court: Admitted.

Mr. Lyon: That, I believe, is also listed in the pretrial list of exhibits to be——

The Court: A great many of these are.

Mr. Lyon: As Exhibit M.

The Court: A great many of them are referred to in the pretrial list, and the numbers don't correspond at all.

(The document referred to was received in evidence and marked as Plaintiff's Exhibit No. 16.)

Mr. White: I next offer for identification as Exhibit 17-A and 17-B, two order slips, 17-A bearing the heading "Matilda Bergman," and the second, "Orange Lite."

Mr. Lyon: What is the purpoe of this, Mr. White?

Mr. White: We have in Mr. Muench's answer to the interrogatories the denial, that none of the defendant's agents, officers, employees or representatives had known of the plaintiff's Magi-Color drip candles prior to defendant's manufacture of its Make-a-Rainbow candle. Those slips will [13] identify the shipments into defendant's home town, Syracuse, New York, in 1945.

That I expect to prove.

The Court: It will be marked for identification.

Mr. White: Thank you, your Honor. I have a brief opening statement.

(The exhibits referred to were marked Plaintiff's Exhibits 17-A and 17-B for identification.)

Mr. White: This is a suit brought for infringement of U. S. Letters Patent No. 2,464,361, issued March 15, 1949, to Lester Wilson for drip candle.

The defenses pleaded in the answer are non-infringement and validity. The defendant has admitted infringement to this extent in the record of this case: We have defendant's statement of the issues involved in which it is stated (and I quote):

"From May 17, 1949, to September 5, 1952, defendant manufactured candles with different aniline dyes impregnated in the wick. Infringement by this candle will not be contested."

Now this lawsuit deals with a subject matter, the making of candles, which is an art that has been practiced for generations, if not centuries, all over

the world. It is an ancient art, and one which by reason of its universality and the people who work in it has been thoroughly investigated, I should say. Consequently we would expect any improvement in candles to be of an ordinary nature, I think.

And strange it would be for there to appear for the first time a candle that is made, burns and gives a final performance unlike any candle that, so far as the record in this case shows, was manufactured, known or sold on any market prior to this invention.

Now we in the patent business have occasion in the course of our years of practice to observe many inventions, to appraise them as to their inventive qualities. I have been in business at least long enough to get fair flattop, and I [15] can say in the course of my practice this particular invention will stand out for its originality and simplicity among the relatively few really striking, and I say and I believe that the court will agree after all the evidence in this case is in that it is capable of meeting the standards of invention that have been applied in any of our courts and decisions.

So attractive, so unusual, has been this invention that the defendant couldn't resist it. It has been developed in the interrogatories that the defendant did not know of such a candle having been sold on any market in the world prior to the plaintiff's introduction of his candle.

We will have occasion to appraise the merits of the cited art, but from my study of that art and

knowledge of the facts and circumstances I can only conclude that the defendant made up its mind that it must have this candle, it must manufacture it, it was big enough and powerful enough to get away with it against a financially small inventor.

That I think the evidence will establish.

I am prepared to call Mr. Wilson.

The Court: Do you want to make an opening statement, Mr. Lyon?

Mr. Lyon: Very briefly, your Honor.

The Court: Let me see, the defendant Emkay has not been served.

Mr. White: That is right. [16]

Mr. Lyon: There is no such. I move the dismissal as to the defendant Emkay.

Mr. White: To the best of my knowledge and acquired later there was no Emkay Candle Corporation at the time of the filing of the suit, and I accept the motion to dismiss.

The Court: The case is dismissed as to Emkay Candle Company, Inc., a corporation which is not a corporation.

Mr. Lyon: There has been since created an Emkay Candle Company. There was not at the time of the complaint.

The Court: Very well.

Mr. Lyon: If your Honor please, as Mr. White so aptly stated, the making of candles is an ancient art, consequently any invention in the candle art at this late date must necessarily be a very limited one.

He didn't say anything about his patent. His

patent relates to the candle which, upon burning, will drip successively different colored drippings. When he applied for a patent the Patent Office finally refused to grant any such patent.

Mr. White appealed that to the Board of Appeals and the Board of Appeals had represented to it that certain candles which were in the prior art would not drip different colored drippings.

We have made candles in accordance with the disclosure of those prior patents and they will be burned in the courtroom and they will give different colored drippings, so the basis upon which the Board of Appeals granted this patent is false. [17]

It is also to be noted that the Board of Appeals in ordering the patent issued said they couldn't conceive of why anybody wanted such a candle, but if Mr. Wilson wants it that badly they will give him a patent on it.

Furthermore, there is——

The Court: Is that in the file wrapper?

Mr. Lyon: That is.

The Court: Very well. I see it, Board of Appeals. All right.

Mr. Lyon: Furthermore, you will note upon reading the claims of the patent, that claims 2 through 6 all call for a drip candle having a wax body and a wick containing different coloring material.

Claim 1 phrases that——

The Court: That is, all the claims?

Mr. Lyon: All except claim 1 call for the coloring material to be in the wick. Claim 1 calls for the coloring material to be normally undissolved in the

wax of the candle, which means the same thing in my mind.

Since the early candle which Mr. White referred to, and which we do not contest, comes under the patent, defendant's manufacture of candle is as illustrated on this board. We first take an ordinary wick——

The Court: All right. Let's mark that for identification B. [18]

The Clerk: Just a minute, your Honor.

Mr. Lyon: I think I have it on the list as N.

The Clerk: We have a list already prepared.

The Court: Is that N?

Mr. Lyon: Yes.

(The exhibits referred to was marked as Defendant's Exhibit N for identification.)

Mr. Lyon: Referring to Defendant's Exhibit N for identification, we first take a wick, we dip it to form what we call a core or a thin taper, no dye being applied to the wick, no dye being applied at all until we get a quarter of an inch taper built up, at which time we take what is called muetter farben, or mother color, which is wax with dye dissolved in it, according to the ancient practice for coloring candles, and we put different colored muetter farben along the taper. Then we continue dipping in the normal manner to build up the candle.

The Court: So it comes out a white candle?

Mr. Lyon: It comes out a white candle.

The Court: On the exterior?

Mr. Lyon: On the exterior. And on burning it will

change colors according to the various dyes that it runs into. But there is no dye in the wick, there is no dye——

The Court: That is built according to the teachings of what? Any patent? [19]

Mr. Lyon: No, your Honor. It is according to the teachings of the Muench Kruezer Candle Company.

The Court: Unpatented?

Mr. Lyon: Yes.

The Court: In the public domain, that is your position?

Mr. Lyon: Yes.

Your Honor will notice in the Wilson candle he paints dyes on the wick, and the patent so called for dye on the wick, or dye undissolved in the wax.

We dissolved our dye in the wax before we put it on. So we feel that there is a serious issue, one, the patent was issued on a false premise in that the prior patents to Nelson and Frederichs, which show metallic salts in the wicks of candles will, in fact, color the drippings, and the Patent Office was told they wouldn't, so the patent is invalid. But even if valid, it is not infringed, because of the manner in which the defendant manufactures its candle in which the dye is never in the wick and is dissolved in the body of the candle.

Mr. White: Does the dye never contact the wick, counsel?

Mr. Lyon: The only way that the dye can get in the wick prior to burning of the candle is if it migrates. There will be an issue on that.

You claim that your dye is never in the body of the candle. The fact will show that the dye in [20] a candle will migrate over a period of years, so that the dye will go from the wick of a Wilson candle into the body of the candle.

Mr. White: So we may not have any uncertainty in the court's mind, at this point does the defendant contend that that dye does not go on the wick of the candle?

The Court: Do you mean at any time?

Mr. White: At any time. When its candles go out on the market.

The Court: At any time before it is sold?

Mr. White: Any time before the customer uses it.

Mr. Lyon: Yes.

Mr. White: You had better not cut open one of your client's candles, then.

Mr. Lyon: May I ask your position?

Mr. White: My position is you will find among the exhibits, Exhibit 13, the defendant's candles purchased locally last week, that your dye is on the wick. It is in the core and it is on the wick.

There we are (indicating).

Mr. Lyon: So we may have a clear-cut issue in that regard——

The Court: That is a partially burnt candle?

Mr. White: No. That is a freshly purchased candle, but cut to show where the dye actually is.

The Court: Cut, I see. [21]

Mr. White: Cut, right.

The Court: By the way, you are standing on all six claims? Are all six claims in issue?

Mr. White: Right, your Honor.

Mr. Lyon: Mr. White, we will still stand by our statement that our candle is manufactured in accordance with Exhibit N, and any dye which might possibly contact the wick is a result of migration.

Mr. White: All I have to say is whatever may be the intention as they go out on the market and as the public buys them the dye is on the wick.

The Court: Have you finish your opening statement?

Mr. Lyon: Yes, sir.

Mr. White: There are just a couple of points——

The Court: You have handed me up a book of prior art. Are you going to tell me anything in advance about this prior art which you claim?

Mr. Lyon: Most of that prior art is for the purpose of showing what the Patent Office had before it and the various developments. The most important of the prior art patents are the patents to Nelson, No. 1,908,044, which is a patent relating to a candle with certain metallic salts in the wick. Candles made according to the teachings of Nelson will be offered in evidence. They will be burnt to show that the metallic salts in the wick actually color the drippings of the [22] candle.

The next important——

The Court: Wait a minute now. Nelson doesn't have any diagrams. This is the first patent I ever saw that doesn't have any pictures in it.

Mr. Lyon: It is often that way in chemicals, your Honor.

The next patent in the book——

The Court: Frederichs?

Mr. Lyon: Frederichs, is similarly so. If you will notice there the numeral 3 refers to a strip in which is painted or otherwise ironed to the wick some metallic salts, which we will prove upon burning of the candle will cause colored drippings.

Nelson was cited to the Patent Office. As a matter of fact, Nelson was the basis of the rejection by the examiner of the patent in suit, and you will find in the file wrapper on page 35, pages 34 and 35 of the file wrapper, being Mr. White's brief, in which he states to the Patent Office that the metallic salts or similar color does not and cannot color the drippings of the wax.

Thus we will prove from Nelson and Frederichs patents that this concept is old.

The other two patents which we will call the court's attention to particularly are the Hausamann German patent, [23] of which we have various exemplars, which is simply a white candle with a red core, which, of course, will drip red over a white exterior.

We will offer in evidence Emkay catalogs, being the defendant's catalogs published as early as 1941, in which we advertised a rope, and our Star Pillar candles, a partially burned exemplar of which I am illustrating to the court. You will note that.

The Court: Which is marked for identification?

Mr. Lyon: If you wish it marked, it will be Exhibit O.

The Court: All right.

Mr. Lyon: Which you will note is a white candle——

The Clerk: Just a minute.

Mr. Lyon: You may mark it O.

(The exhibit referred to was marked Defendant's Exhibit O for identification.)

Mr. Lyon: Which of course has dripped red over a white exterior.

The evidence will show that we have made them with green, red, and various other colored cores.

Of course if you took a candle like that with a red core and another one with a green core and put one on top of the other you would have the Wilson patent.

So it is an elementary rule of patent law that you cannot have invention under those circumstances. Just putting two items of prior art together where they perform the same function that they did perform individually does not result in a new combination.

Mr. White: May I have just a moment, your Honor? It seems that I am slightly on trial for what I said before the Patent Office.

The remarks made about the interpretation by the Patent Office of the Nelson patent, the defendant throws Nelson and Fredericks together.

Now here is something for the defendant to do and to get ready for his proof. If I understand, the words "drip candle" is in neither patent. We are here talking about drip candles. Find those words in either patent.

The Court: I suppose somebody will tell me the

difference between an ordinary candle and a drip candle. I thought they all dripped.

Mr. White: No, they do not, your Honor. The general practice has been to endeavor to make candles for illumination and to consume all the wax and that do not drip. I think we will be able to demonstrate that by some of the defendant's [25] own candles.

Mr. Lyon: Mr. White, your statement to the Patent Office was not——

Mr. White: Permit me to finish, counsel.

Neither of those references has anything to do with the drip candle and my statement to the Patent Office still stands.

Now as to the examples, will the defendant please undertake to show to this court replicas of the examples in either Nelson or Frederichs just exactly how Frederichs and Nelson tell you to make them using such combinations as strontium chloride, sodium chlorine and salts of that nature.

I say that the defendant cannot come into this court and follow an example specifically set forth in either patent and have it show as making out its case. So I say that the Board of Appeals' statement, which I now quote, still stands as good law applicable to this case.

In its reversal of the examiner the board stated:

"We do not find, however, any suggestion in the prior art of the treatment of candles in any way which would produce a result disclosed by applicant. In view of the conclusion that the subject matter is useful and of sufficient importance and

that the claims define a structure which is not anticipated by the prior art, it should be regarded [26] as involving the element of invention, notwithstanding the simplicity of the inventive thought when once arrived at and what appellant has done. Judged by any standards announced by the courts it is entitled to patent protection."

So the contest in the Patent Office was one based upon interpretation of the writings of the applicant and the prior art. We are here to compare actual performances.

Does your Honor care now to hear from Mr. Wilson?

The Court: I have no pleasure about anything at all. It is your lawsuit. I am here to listen.

Mr. White: Mr. Wilson, will you take the stand and be sworn, please?

LESTER F. WILSON

called as a witness in his own behalf, having been first duly sworn, was examined and testified as follows:

The Clerk: Your name in full, please?

The Witness: Lester F. Wilson.

The Clerk: Your address?

The Witness: 107 East Longdon Avenue, San Gabriel.

The Court: Before you proceed, Mr. White, I would like to ask a question.

You called my attention to the statement in the defendant's statement of issues involved on pretrial to the effect that "From May 17, 1949, to Septem-

(Testimony of Lester F. Wilson.)

ber 5, 1952, defendant [27] manufactured candles with different analine dyes impregnated in the wick. Infringement by this candle will not be contested."

Is that candle here? Do you have that?

Mr. Lyon: Your Honor, my information was, and it is so stated I believe in one of the papers on file, that in 1952 we discontinued making that candle and they have all been sold. We don't even have one left in the warehouse.

The Court: But you do concede that that was infringement?

Mr. Lyon: Yes, your Honor. In those early candles, what we did was take the multicolor and paint it directly onto the wick according to the teachings of the Wilson patent. Now we don't.

The Court: Now what I want to know, Mr. Lyon, is this: If you concede infringement how can you still attack the validity of the patent because if the patent is void there cannot be any infringement.

Mr. Lyon: Well, that is a question of semantics. We concede infringement if valid, put it that way. We attack the validity of the patent.

The Court: Very well.

Direct Examination

Q. (By Mr. White): Mr. Wilson, you are the inventor named in the drip [28] candle patent here in suit? A. Yes.

Q. Have you at all times yourself had continuous ownership of the invention and the patent?

A. Yes, sir.

(Testimony of Lester F. Wilson.)

Q. In about what year did you start in the candle business? A. About the spring of 1939.

Q. Where were you then located?

A. At 556 West Mission Drive in San Gabriel.

Q. Are you now at the same location?

A. Directly across the street.

Q. Prior to entering into the making of candles, what education, if any, did you have in chemistry?

A. None whatsoever.

Q. As a matter of fact, what was the extent of your formal education?

A. Part of a 2-year business course in high school.

Q. Now following your starting in the candle business in 1939, did you originate any candles?

Mr. Lyon: I will object to that.

Q. (By Mr. White): After starting into the candle business, what kind of candles did you make?

A. Novelty candles. [29]

Q. What do you mean by novelty candles?

A. Candles such as had never been on the market before to my knowledge.

Mr. Lyon: I object to that as calling for a conclusion of the witness, "never been on the market before," and move that it be stricken.

The Court: I think that is a conclusion of the witness.

What did you make, candles in the shape of oranges and pine cones?

The Witness: Yes, sir.

(Testimony of Lester F. Wilson,)

The Court: Camellias and gardenias and roses, and so forth?

The Witness: Yes, sir.

The Court: Each with a different scent?

The Witness: Each with a different scent, and some of them have a variety of colors.

The fact of the matter is I think I had prior to 1945, 17 different candles, mostly scented candles, I named them. And then there would be a variety and each candle in a variety of colors.

The Court: And shapes?

The Witness: Well, they had names on them. of colors or shades of colors.

The Court: You mean you named them like Betty, Anna, Joe or Jack? [30]

The Witness: No. The orange candle we called Orange Lite.

The Court: I see. And the cone?

The Witness: The cone would be pine, and so forth.

The Court: And they were colored to correspond with what they were supposed to imitate?

The Witness: Yes, sir.

The Court: In other words, a pine cone would be green.

The Witness: Well, it could be green. I made them originally to look like a dry pine cone, kind of a brownish color.

Q. (By Mr. White): Will you relate the circumstances that occasioned your development of the candle shown in the patent here in suit?

(Testimony of Lester F. Wilson.)

A. I had many calls by customers, that is, in the retail department of my business, for candles that people could drip on bottles, that would be an ordinary tapered candle with a solid color to make a decoration, an ornament for a centerpiece on a table.

Most of the candles made are of a white core, with just a little thin coating of wax, and the cheap solid colored waxes that they were looking for were hard to find. People kept asking me for them, and I wondered if it would not be possible to make a candle that would drip more than one color [31] and still look white. Then I went to work on it.

Q. At that time were the majority of candles as manufactured in the candle industry of the drip type or of a non-drip type?

A. Of a non-drip type. That has been the aim and in most advertisements of candles they advertise that they do not drip.

The Court: The wax burns?

The Witness: That is the idea.

The Court: What do they put in to make it burn?

The Witness: Waxes will burn, but it is the construction and composition whether they will drip or will not drip.

The Court: You mean it is the shape?

The Witness: Not necessarily. It would be the size of wick or the composition of the wax and things like that.

Q. (By Mr. White): At that time there were

(Testimony of Lester F. Wilson.)

drip candles and non-drip candles generally known?

A. Well, there were candles.

The Court: There were drip and non-drip candles?

The Witness: As far as I know there was no candles advertised as drip candles.

Q. (By Mr. White): Will you continue with your account of the circumstances leading to the development of your candle? [32]

A. Well, I got this idea and I thought it would be a very good idea if it would be possible to do, and about the first thing I had done—I had never made a straight ordinary, what we call a tapered candle—I went over to a refrigerator place and got some square, I should say rectangular, heavy wire frames, took them home and soldered hooks on opposite sides and stretched a wick through these hooks to hold the candle tight and straight.

Then I took a solution, a heavy solution of dye and paraffine, melted it together and painted it on these wicks, let it cool, and then I dipped the wick in a body of melted wax, a container, I should say, and kept doing that until I built up a candle that I thought was about the right size such as Mr. White has in his hand there now.

The Court: You dip them in white wax?

The Witness: Yes.

Mr. White: The witness has referred to two candles that I have removed from Plaintiff's Exhibit 4, one being a candle which has partially been cut in sections and the other one has been uncut.

(Testimony of Lester F. Wilson.)

MQ. Mr. Wilson, will you compare the appearance of the candle as we see it in the section with what you then made.

A. It is practically the same.

Q. Incidentally, what candles are these that I hold in my hand? [33]

A. Those are the candles that we put on the market every day.

The Court: What do you call them?

The Witness: We call them Magi-Color drip candles.

Q. (By Mr. White): And you have been manufacturing those under the name Magi-Color for how long approximately?

A. Since early in 1945.

Q. Mr. Wilson, I will ask you, and with the court's permission, to burn one of these candles.

The Court: That is not one out of the exhibits, is it?

Mr. White: No. I suggest that we burn one of them from the exhibits.

The Court: The exhibit has two candles. I will mark on them——

The Witness: Do you want to scratch it on?

The Court: I was going to mark them 1, 2 and 3.

Mr. White: The ones that are not going to be burned can best be identified by tying a card to the wick.

The Court: Here is one that is split here in this Exhibit 4, which will be marked 4-A.

(The exhibit referred to was marked Plaintiff's Exhibit No. 4-A for identification.) [34]

(Testimony of Lester F. Wilson.)

The Court: I am handing the witness the third candle. Put it up here so we can see it.

The Witness: Yes, I will. This candle doesn't quite fit.

The Court: Was this removed from Exhibit 4?

Mr. White: Right, your Honor. No, that was taken from mine.

Q. (By Mr. White): Now, Mr. Wilson, while this candle is burning, will you describe to the court what we see in the cut section of the Exhibit 4 candle?

A. Well, you see the white wax on the outside to conceal and make the—well, if I could use the word "gimmick," sales gimmick, to make a mystery candle, if you want to call it that way, and the wax that is on here hasn't spread through the candle a great deal.

Q. When you say "on here,"——

A. On the wick.

The Court: Is that wax on the wick?

The Witness: It is a combination of wax and aniline dye.

The Court: In between the colors the wick is white?

The Witness: Yes.

The Court: And it seems to be smaller.

The Witness: No. It is the same size wick, but when you put the wax on, it makes the wick a little larger or seem a [35] little larger.

The Court: That is colored wax that you put on the wick?

(Testimony of Lester F. Wilson.)

The Witness: Yes, sir.

The Court: I see. On these intervals?

The Witness: Yes, sir.

The Court: How many colors have you got on this?

The Witness: Fourteen colors in the candle. Not 14 different colors, but 14 different——

The Court: Stations?

The Witness: Stations, yes.

The Court: How many different colors—three.

The Witness: Oh, no. About seven.

Q. (By Mr. White): That candle is made using what kind and quality of wax?

A. I use paraffine, known to the trade as 138-40 melting point, with about 10 per cent stearic acid.

Q. Does the quality of the wax have anything to do with the tendency of the dye to migrate within it?

A. I am not really a chemist on that, but I would think so.

Q. In what respect would you think so.

A. I believe the lower quality wax has a little more oil. I am not sure. I don't know.

The Court: It has a little more oil; what does that [36] mean, that it migrates?

The Witness: It might.

The Court: In other words, the higher the quality of the wax, the less migration of the color?

The Witness: I would think so.

Q. (By Mr. White): Had you, prior to the making of this candle, Mr. Wilson, known of the

(Testimony of Lester F. Wilson.)

manufacture or sale any place in the world of a single candle which would burn from dyeings concealed within it to produce different colored drippings? A. No, sir.

The Court: Well, the record will show that the candle is burning, and that it was a white candle and now there is red there along one side of it. About three-quarters of an inch has burned.

Q. (By Mr. White): Having developed the candle as you have described it, Mr. Wilson, what did you then do to acquaint your customers with this candle?

A. I have been making these different novelty candles since '39, and we had customers—by "customers" I mean wholesale customers—throughout the United States, and when I got this candle ready for the market, I thought it was perfected, I sent them samples, I sent them literature, and generally it was samples to start with, so they could really see what the candle did. [37]

Q. Where were your customers in 1945?

A. All over the United States. A little sparser in the South?

Q. Did you have customers in New York?

A. Yes?

Q. Pennsylvania? A. Yes.

Q. New England States?

A. Every state in New England.

Q. Mr. Wilson, you have compiled a tabulation of your yearly sales of these Magi-Colored drip

(Testimony of Lester F. Wilson.)

candles from the year 1945 through 1955, have you not? A. Yes, sir.

Q. As we see it in Plaintiff's Exhibit 16?

The Court: What is that?

Mr. Lyon: 15, I think.

The Court: 15, I believe.

The Witness: 16 this is marked.

The Court: That is a mistake.

Mr. White: I beg your pardon. 15.

Q. (By Mr. White): Will you tell the court what happened in sales and as signified by your tabulation there?

A. Well, the sales mounted, and mounted quite rapidly, for a small outfit, until I had too much competition from large candle companies, such as Emkay and Victrylite, that had [38] large advertising funds and many salesmen throughout the world?

Q. Who do you mean by Emkay?

A. Muench Kruezer.

Q. I notice that according to this tabulation the sales increased to a maximum of about 475,692 in the year 1951, and then seemingly have decreased steadily to the present. When did you notice, first, the most active competition by the larger manufacturers to whom you refer?

A. Well, I knew they were in the field from 1950, but they didn't really hurt me until 1952. They evidently had got around the country with a candle by that time.

Q. What, in the year 1951, was the total of your

(Testimony of Lester F. Wilson.)

personnel in your candle manufacturing business? How many people did you have?

A. Eight people.

Q. How many do you have at present?

A. Three.

Q. To what do you attribute that drop?

A. Infringement on my patent.

Q. What did you do in connection with your other lines of candles at the time Magi-Color came out in 1945?

A. I manufactured them along with Magi-Color for a while.

Q. How long? [39]

A. Until the spring of 1950. In the fall of '49 I notified all of my customers that I would no longer manufacture the novelty candles, with the exception of Magi-Color.

Q. Why did you decide not to manufacture them?

A. I thought it was doing well enough. I would have to either enlarge, hire more labor, and it was a nice business and it was still growing, and there was no reason for it to stop growing, I could do a better job by concentrating on one candle.

Q. Mr. Wilson, I hand you plaintiff's Exhibit 3 and ask you if you will tell the court what it is.

A. This is the first label we had on Magi-Color drip candles, and this is bearing the patent number.

Q. When did you first commence selling the product in that box so labeled?

A. With the patent number?

(Testimony of Lester F. Wilson.)

Q. Yes.

A. Very shortly—well, some time in '49. Probably within 30 days of the date on the patent.

Q. After March 15, 1949? A. Yes.

Q. You spoke of competition by a Victrylite Company; will you tell us what happened in relation to that competition?

A. We filed suit in federal court in Milwaukee.

Q. Why did you file suit? A. How is that?

Q. Why did you file suit?

A. On an infringement of my patent.

Q. What had Victrylite been doing?

A. They had been making candles.

Q. What kind of candles?

A. Magi-Drip candles.

Q. How were they made?

A. They were made the same way I make mine.

Q. By that you mean what?

A. By successive colorings of dyes in the candle, and concealing them so that the candle looked white and when it would drip, it would drip several different colors.

The Court: Why does this all drip on one side? Why doesn't it drip all around?

Mr. Lyon: The wind is blowing, your Honor.

The Witness: It is the way the wind is coming on it.

They will actually go on one side more than they do the other, sometimes.

Q. (By Mr. White): What did you do then in relation to the Victrylite infringement?

(Testimony of Lester F. Wilson.)

A. We filed suit in the federal court of Milwaukee. We received a consent decree and licensed them to make candles after my patent. [41]

Mr. White: I call the court's attention to Exhibits 7, 8 and 9, being respectively certified copies of the complaint, answer, and final judgment entered in civil action 4904, filed December 5, 1949, in the U. S. District Court for the Eastern District of Wisconsin, Lester F. Wilson, plaintiff, vs. Victrylite Candle Company, defendant. I urge the materiality, relevancy of these documents as exhibits in this case, because it shows another infringing manufacturer had concluded the controversy as of that time between it and the plaintiff by subjecting to a final judgment, according to which relief was granted as prayed for in the complaint with certain reservations that had to do with merely the entry of judgment for damage, profits, or costs. [42]

And I further urge the materiality for the reason that pleaded in the answer of that case we find the bulk of the patents, the prior art here relied upon by the defendant.

The Court: Do you have an objection, you say?

Mr. Lyon: Well, your Honor, probably my objection to the Exhibits 7, 8 and 9 is more to its weight than to its materiality. After all, your Honor is familiar with the fact that in consent decrees that plaintiff may have secured against other people of course it has no binding effect upon this defendant and is really not relevant with respect to the patent.

(Testimony of Lester F. Wilson.)

We don't know what was paid anybody. The judgment itself says that there will be no damages, profits or costs. We do know that the Victrylite Candle Company secured an exclusive license under this patent, but we also know this—this is a rather significant thing—is this the state of the record that you intend to leave it in with respect to the Victrylie Candle Company.

Mr. White: No. I have Exhibit 5 which is a tabulation of the royalties that Victrylite Candle Company paid.

Mr. Lyon: Are you going to let the court know that the Victrylite Candle Company ceased paying royalties because they thought so little of it and that you had to sue them?

Mr. White: I am going to go into that later.

Mr. Lyon: They didn't think so much of the patent [43] because even after taking out a license they refused to pay a royalty.

The Court: These are admitted in evidence, Exhibits 7, 8 and 9.

(The exhibits referred to were received in evidence and marked Exhibits Nos. 7, 8 and 9 respectively.)

The Court: Whether counsel is correct or not, I think both of you know that in so far as stipulated judgments in patent cases are concerned, I refuse to sign them except there be a provision in them that as between the parties the patent is valid, and that is as far as it can go.

(Testimony of Lester F. Wilson.)

Mr. White: I think it is a matter of the weight of the evidence.

I should like to introduce as Exhibit 5 in evidence the license agreement.

Mr. Lyon: It is already in evidence, Mr. White.

The Court: It has been admitted.

Mr. White: I am sorry if it has already been received in evidence.

Q. Mr. Wilson, I show you Plaintiff"s Exhibit 6, which is a tabulation of Victrylite royalties and will ask you to tell the court what that tabulation represents.

A. Well, the tabulation represents the amount of money, the number of candles and the amount of money, paid each quarter in each year of the life of the contract. [44]

The Court: Up to now?

The Witness: Up to now; yes, sir.

The Court: With Victrylite?

The Witness: With Victrylite. It was a steady increase up until 1952 when they objected to paying because I couldn't put Muench Kruezer out of the market and it is still in effect and they are still paying certain royalties.

Mr. White: Is Exhibit 6 in evidence, Mr. Clerk?

The Clerk: Not yet.

Mr. White: I would like to formally introduce it in evidence, your Honor, Plaintiff's Exhi' t 6.

The Court: Admitted.

(Testimony of Lester F. Wilson.)

(The exhibit referred to was marked Plaintiff's Exhibit No. 6 and received in evidence.)

[See Book of Exhibits.]

Mr. White: Now at this point the court undoubtedly, in view of counsel's remarks, will be interested in the nature of this license with Victrylite.

The Court: Do you have a copy of that?

The Clerk: It is on your desk, your Honor.

The Court: You are referring now to Exhibit 5?

Mr. White: Yes, your Honor, the definition under "License Grant."

I would like to read that, bearing in mind that we are talking about the Wilson patent and all its six claims. Before reading from the license agreement, may I compare for [45] your Honor Claims 1 and 2 of the Wilson patent.

Claim 1: "A drip candle comprising a wax-like body, different wax-soluble dyes normally concealed within the interior of the body at different locations longitudinally thereof and normally undissolved in the wax of said body, —" Now that claim does not at that point or thereafter limit the dyes as being on the wick or such and such a distance from the wick or anything of the sort. It says these "dyes normally concealed within the interior of the body at different locations longitudinally thereof— and normally undissolved in the wax of said body.".

Of course all we have to do is take a look at the cross-sectional cut of the candle and see that that is exactly how the dyes exist.

The claim concludes with the statement: "—said

(Testimony of Lester F. Wilson.)

dyes dissolving in the melted wax of the body to form multi-colored drippings as the candle progressively burns."

Now that claim means this, they can be infringed by dye on the wick or by dye located elsewhere within the body of the candle, just so long as it otherwise corresponds to the terminology of the claim. [46]

Now no one in this business making these multi-colored drip candles has ever done anything except with one objective, and that is to make a candle in which the dye bodies are concealed in the wax body of the candle, because if the observer could tell what color the candle is going to drip next it would lose one of its greatest assets, and that is the unpredictability of the dripping colors.

So the claim says it is only concealed in order for these colors to come out distinctly identifiable as different colors. As your Honor will observe from the candle now burning the dyes have to color one at a time, and that comes about by reason of the longitudinal basing in the candle. And of course it is evident that those dyes normally are undissolved in the melted wax of the body.

Mr. Lyon: I object to counsel testifying in this case. This isn't the time to argue the case.

Mr. White: I am merely pointing out to the court what is the meaning of the claim in order that we can interpret the paragraph under the license grant to Victrylite.

(Testimony of Lester F. Wilson.)

Mr. Lyon: I think the document is the best evidence of what it means.

The Court: Yes, I think so. I think you can argue that at the appropriate time, counsel, rather than throughout the trial.

Mr. White: Very well. [47]

In Claim 2 then we have the language:

"A drip candle having a wax body and a wick containing a colorful material * * *" So we have that limitation in Claim 2 that does not appear in Claim 1.

The granting provision in Exhibit 5 reads as follows: "Reserving in himself, ——"

The Court: Let me see. The license grant here is the exclusive license under said patent, limited, however, to the manufacture, use and sale of candles having dyed cores as distinguished from dyed wicks and comprising a different points axially of the candle at least two different core candles.

Mr. White: That is right.

The Court: That is not a dyed wick, they are not licensed to produce candles under Claims 2, 3, 4, 5 or 6, is that right?

Mr. White: That is right. Those are the candles that defendant admitted having infringed.

Victrylite has no right whatever under such claims. So wherein is Victrylite even, shall we say, a permissible party, much less a necessary or an indispensable party?

In so far as the other claim is concerned, the patentee here did not grant Victrylite a license that

(Testimony of Lester F. Wilson.)

would exclude himself, but he reserved that right. So therefore what he [48] did grant Victrylite was a small parcel out of the patent.

Q. Mr. Wilson, I show you Plaintiff's Exhibit 12, which contains two candles—may I place them here so you can both see them—and ask you how those candles came into your possession.

A. I had a friend of mine order them through the Los Angeles branch of the Muench Kruezer Candle Company.

Q. In what year? A. 1953.

Q. And what time of the year?

A. I believe it was February. I can't remember without looking at the order.

Q. Would you, being a candle maker, describe them to the court from their appearance?

A. I would say that it was a candle that had a concealed dye in the wick, along the wick, and covered with a white wax to make it outwardly appear as a white candle.

Q. Did you ever burn any of those candles?

A. Yes.

Q. How did they perform upon burning?

A. Approximately the same as mine; that is, in effect.

Q. I will ask you to describe particularly the colorings which we see along and about the wick.

The Court: That is the candle of Exhibit 12 which is cut in half? [49]

The Witness: Yes.

Mr. White: That is correct, your Honor.

(Testimony of Lester F. Wilson.)

The Witness: Well, they are run together very badly, they look to me like analine dyes placed along the wick or on the wick, it is hard to tell which without a microscope. Maybe you couldn't then.

Q. (By Mr. White): What happened to that dye as the candle burned?

A. It diffuses into the total wax as it melts.

Q. And it diffuses from where in relation to the surface of the wick?

A. From the core of the candle right around the center of the candle around the wick at the surface of the wick throughout the whole body as it burns.

The Court: When it burned was that a drip candle?

The Witness: Yes, that is the object of it.

The Court: I mean the one you are talking about, Exhibit 12?

The Witness: Yes, sir. It is advertised as such.

Mr. White: At this point I should like to read from the back of Exhibit 12:

"Make-a-Rainbow. Self-coloring candles.

"'It's beautiful * * * astonishing the way these pure white candles melt in magic patterns of multi-colored wax." [50]

The next column: "Rainbow candles make different, unusual gifts * * *"

The last column: "Entertaining soon? For a centerpiece sure to be a conversation piece, burn Rain-

(Testimony of Lester F. Wilson.)

bow Candles. Hear guests exclaim, then marvel as the brilliant colors emerge and blend." [51]

Q. (By Mr. White): Mr. Wilson, I now hand you Plaintiff's Exhibit 13 and will ask you to——

The Court: Now, let's see. 13 is a box of defendant's candles, the Deluxe?

Mr. White: Yes.

Q. (By Mr. White): Where did you obtain those candles, Mr. Wilson:

A. I bought those in San Fernando.

The Court: When?

The Witness: About a week ago. Last week. I don't have the exact date. It was last week.

The Court: That is near enough.

Q. (By Mr. White): I believe you cut open one of those candles, which counsel has mutilated?

Mr. Lyon: I plead not guilty. My client did.

The Witness: Yes, sir.

Q. (By Mr. White): Will you describe for us that candle?

A. It is to all intents and purposes the same as the Magi-Color drip candle, or the previous candle bought in 1953.

The Court: This candle seems to have a kind of an off—the outer coating seems to be a pure white and the other seems to be kind of an off color. Paraffine and wax, is that the difference?

The Witness: I imagine.

The Court: Which is paraffine? [52]

The Witness: It is practically all paraffine.

The Court: Practically?

(Testimony of Lester F. Wilson.)—

The Witness: I would say in my candles. I imagine that is all paraffine, a big percentage.

The Court: That is a petroleum product?

The Witness: Yes.

The Court: They don't make it out of mutton?

The Witness: Oh, no. Paraffine is a petroleum product.

Q. (By Mr. White): Mr. Wilson will you burn for us——

The Court: It isn't going to burn before 12:00 o'clock, so you had better not start it.

Mr. White: Shall we recess?

The Court: Is that your next project?

Mr. White: That is the next burning exhibit, your Honor, which I thought we would start in progress. But if you would prefer to light it in the afternoon session——

The Court: It is only five minutes.

What shall we do with this candle that is now burning? Has that burned enough to satisfy everybody?

Mr. Lyon: I think it is time to blow it out.

The Court: Has that burned enough to satisfy everybody?

Mr. White: If it is satisfactory to the court, it is satisfactory to us.

The Court: It has demonstrated to me that it has different colors. [53]

Mr. Lyon: That's right. You can blow it out if you like.

Mr. White: Yes.

The Court: All right.

We will recess until 2:00 o'clock.

(Thereupon, at 11:55 o'clock a.m., a recess was taken to 2:00 o'clock p.m.) [54]

The Court: Any ex parte matters?

The Clerk: No.

The Court: Proceed.

LESTER F. WILSON

the witness on the stand at the time of recess, having been heretofore duly sworn, was examined and testified further as follows:

Mr. Lyon: If the court please, we placed on the desk what has been marked by the clerk as Defendant's Exhibit F, which is a Star Pillar candle as manufactured by the defendant since as early as 1940. Since it is a rather immense thing it takes a rather long time to burn so I would like to light it now.

Mr. Muench: Mr. Lyon, I would suggest that you put a piece of paper under that.

The Court: Is this a dripless candle or a dripper?

Mr. Lyon: This is a candle that has a red core and it will drip.

The Court: I have too many candles already here at one time.

Mr. Lyon: We can put it somewhere else. I just wanted to burn it in the court room. [55]

The Court: When we get to your case, we can light your candles.

Mr. Lyon: All right. It is going to take a long time to burn so I thought we might start it now.

(Testimony of Lester F. Wilson.)

Mr. White: For the present I would just like to ask the witness to light the candle before him, which is taken from the box of plaintiff's Exhibit 13 candles.

The Witness: (Lighting exhibit)

The Court: Now this is one of defendant's candles?

Mr. White: Yes, your Honor.

The Court: Let me see that box. I want to see the cut-away portion of the candle.

(The exhibit referred to was passed to the court.)

The Court: Let me see the cut-away portion of Plaintiff's Exhibit 4.

(The exhibit referred to was passed to the court.)

The Court: The record will show that a candle from box No. 13 has been lit.

Direct Examination—(Continued)

Q. (By Mr. White): Mr. Wilson, I will ask you to identify, if you can, Plaintiff's Exhibits 17-A and 17-B for identification.

A. That is an order for candles we received in 1945 from Syracuse, New York. [56]

A. An order for what?

A Magi-Color drip candles, six dozen dozen of three.

Q. The candles, Magi-Color drip, which you were then making and selling, were contained in

(Testimony of Lester F. Wilson.)

boxes corresponding to Plaintiff's Exhibit 3, is that right? A. Yes, sir.

Q. And was that order filled and the delivery made? A. Yes, sir.

The Court: Let me see. Is this the same order, 17-A and 17-B?

The Witness: Yes.

Mr. White: Yes.

Q. Will you distinguish those, Mr. Wilson?

The Court: One says "Shipped to E. W. Edwards & Son, Syracuse, New York"—I see—ordered from E. L. Kirby, 525 East Seventh Street.

Who is that?

The Witness: He was one of our representatives at that time.

The Court: Shipment charged to E. W. Edwards & Son. Very well.

Mr. White: These are offered in evidence according to their numbers, Exhibits 17-A and 17-B.

The Court: Admitted.

(The exhibits referred to were received in evidence and marked as Plaintiff's Exhibits 17-A and 17-B.) [57]

Q. (By Mr. White): Mr. Wilson, can you give the court an estimate of the damage which you have suffered by reason of the defendant's infringement?

Mr. Lyon: I object to that, your Honor, as calling for a conclusion of the witness, and assuming a fact——

The Court: I think that is hardly the way to prove damages.

(Testimony of Lester F. Wilson.)

Mr. White: I am not undertaking to prove damages, your Honor; merely to indicate the seriousness to this plaintiff of the encroachments upon his business.

The Court: That doesn't enter into the validity of a patent.

Objection sustained.

Mr. White: You may cross examine, counsel.

Cross Examination

Q. (By Mr. Lyon): Mr. Wilson, what is a candle follower, do you know?

A. I don't know. I never heard the expression before.

Q. This question of a drip vs. a non-drip candle, are you aware of the fact that the Federal Trade Commission has issued orders prohibiting candle manufacturers from claiming that their candles are dripless? A. No, sir.

Q. Do you agree with them that to some extent all [58] candles drip?

A. Under certain conditions, yes.

Q. That depends principally on the state of the draft in the room, the size of the wick, and so on; that is generally correct, is it not?

A. It could be many things.

Q. Let's take a look at Exhibit 4. Calling your attention to the half candle where it has been cut away in Exhibit 4, do you recognize that the dye covers a larger section of the candle than does the wick, does it not? A. Yes.

(Testimony of Lester F. Wilson.)

Q. Some of the dye has migrated into the body of the candle, is that right? A. Yes.

Q. Do you know how long these samples have been in existence, these candles, Exhibit 4?

A. Not that box, no.

Q. Do you happen to know whether it is a period of months or days or years?

A. Let me see the top of the box.

Is that the original box?

Mr. White: Yes.

The Witness: That candle——

Mr. White: No. I am sorry.

The Witness: The candle in the other box, yes, I can [59] tell you.

Q. (By Mr. Lyon): Which other box are you referring to? Exhibit 3?

A. Yes, sir, that is Exhibit 3.

Q. Can you tell me how long this has been around? A. At least five years.

Q. The older a candle is, a candle like this that has a dye soluble in the wax, the more migration of dye will take place, is that not correct?

A. I imagine it depends a good deal on the quality of the wax used.

Q. In the box corresponding to Exhibit 4, which was furnished to us by your counsel, I find a piece of colored paper with some printing on it. Is a card like that generally placed in each one of your candle boxes? A. Yes.

Q. And do you recommend to the purchasers of your candles that they place one candle right on top

(Testimony of Lester F. Wilson.)

of the other and make a compound candle that way?

A. No.

Q. What does this language mean——

A. Exactly what it says.

Q. —"When this candle has burned down to a short stub, place another one on top of the burned candle and they will keep building up?" [60]

A. Just what it says. That is the best I can explain it.

Mr. Lyon: I will offer the card taken from Exhibit 4—there is one in Exhibit 4?

The Court: Yes.

Mr. Lyon: I think it should be identified somehow in the record.

The Court: 4-A.

The Clerk: 4-A, -B, -C, -D, your Honor.

The Court: All right.

(The exhibit referred to was received in evidence and marked as Plaintiff's Exhibit 4-D.)

Q. (By Mr. Lyon): Prior to the time when you invented or conceived the idea of a candle such as is set forth in your patent, were you aware of the fact that there was on the market various candles that would drip over a white exterior a different colored wax?

A. I don't know that I was. I am not sure what candles I knew about at that time in that respect.

Q. Were you generally conversant in 1945 with catalogs and the literature of your competitors?

A. Not too well.

Q. Did you ever see either an example of or a

(Testimony of Lester F. Wilson.)

picture in a catalog of a star pillar candle as manufactured by the Muench Kruezer Candle Company?

A. Yes.

Q. Had you seen such a candle prior to the conception of the invention of your patent in suit?

A. I hadn't seen the candle; I seen the advertisements.

Q. And you had seen the advertisement where it stated that it drips red wax over a white exterior?

A. No.

Q. I show you what has been identified by the clerk as Defendant's Exhibit C, the same being a Muench Kruezer catalog No. 50, a copy of which is certified to have been received in Division 30 of the Patent Office January 14, 1943, [62] and I show you a page illustrating a star pillar candle and I call your attention particularly to No. 228, "Star pillar candle, 11½ inches high, Christmas red or Christmas green, also white with red center. This candle drips red colored wax over the white outer shell."

Now had you seen that catalog prior to the making of your invention?

A. The only time I ever seen that advertised prior to that probably was in a trade magazine such as gift wares, and probably didn't read the advertisement.

Q. Now in your direct testimony I believe you stated that you put, within 30 days after March 15, 1949, the marking "United States Patent No.

(Testimony of Lester F. Wilson.)

2464361" on your packages for your Magi-Colored candles, is that correct?

A. Approximately, I would say.

Q. Then there was a period of 30 days after the patent issued in which you were selling candles without marking the patent number on the box, is that right?

A. At that time it had a patent pending label on it.

Q. After the patent was issued?

A. As soon as I could get the labels from the printing shop I put them on.

Q. Can you answer my question, was there a period of approximately 30 days after the patent issued when you were selling candles in the old boxes?

A. It could have been.

Mr. Lyon: Under those circumstances, your Honor, I would appreciate, if the plaintiff should win this suit, his recovery must date from the date of written notice. When a patentee has sold a patented article without a patent notice he cannot recover from any infringer until he can show written notice.

The Court: We will argue the case when we get to the end. Do you not think that that is a good idea?

Mr. Lyon: All right, sir.

May I have Exhibits 12 and 13, Mr. Clerk?

(The exhibits referred to were passed to counsel.)

Q. (By Mr. Lyon): Calling your attention to the candle in Exhibit 12, which is split in half and

(Testimony of Lester F. Wilson.)

the various dye sections, I ask you if in your opinion the dye in that candle is undissolved in the wax.

A. Well, I am not chemist enough to tell whether it is dissolved or in suspension or just in there.

Q. Well, it is certainly spread out into the body of the candle, isn't it? A. Yes.

Q. Now calling your attention to the wick, can you testify that any of the dye has penetrated the wick?

A. I think there is dye in the wick. [64]

A. Do you think that the wick has been colored along those sections, the color of the various dyes? A. It looks like it to me.

Q. Taking a look at Exhibit 13, the wick in this broken part has come loose from the candle.

A. That is right.

Q. So it doesn't have the background of that colored dye. But we can see where it would go if it were put back in. You can certainly see that there is a difference in color between this section of the wick, the middle section, and the red portion that is dyed, can't you?

A. Oh, yes, this is slightly dyed. But in burning the wax would go right into the wick and burn it.

Q. But in this condition there is no substantial amount of dye in that wick? A. Slightly.

The Court: There is some discoloration of the wick in that, is there not?

Mr. Lyon: I will show it to the court.

The Court: I was looking at it a minute ago.

(Testimony of Lester F. Wilson.)

Some of it is white and some of it is not.

(The exhibit referred to was passed to the court.)

The Court: Counsel, I am looking at this piece of string that you call a wick and on the under side of it, the portion that is in the blue or green, if that is green, is colored [65] to match it and in the portion that is in the red, or shade of red, or orange, or pink, or maroon, or mauve, or whatever shade of red it is, is also slightly discolored to match the color in which it lays.

Mr. Lyon: We submit that that is some colored wax adhering to the wick, your Honor, and in fact that the wick itself does not contain any dye.

The Court: That will go back in the box.

The Witness: I will put it away. [66]

Q. (By Mr. Lyon): Mr. Wilson, did you bring a lawsuit against the Victrylite Candle Company?

A. Yes.

Q. What is the status of that lawsuit?

A. We——

The Court: Which one? There is a record in evidence where judgment is entered.

Mr. Lyon: I am not referring to that lawsuit, please. I am referring to a lawsuit after you entered into the contract with Victrylite. Did you thereafter have occasion to sue Victrylite?

The Witness: Yes.

Q. (By Mr. Lyon): What for?

A. Non-payament of royalties.

Q. What is the status of that lawsuit?

(Testimony of Lester F. Wilson.)

A. It is pending in the federal court.

The Court: Here?

The Witness: No. In Milwaukee.

Q. (By Mr. Lyon): This tabulation of royalties, after the filing of that lawsuit did Victrylite continue to pay royalties?

A. Yes, according to your record there.

Q. What is the basis of your suit?

A. Not paying full royalties. Paying enough royalties just to keep the contract alive. [67]

Q. Then this summary, Exhibit 6, does not accurately reflect the sales of colored drip candles by Victrylite Company; is that correct?

A. If I thought that was correct, after '52, I would not have brought suit.

Q. Mr. Wilson, is there any teaching in your patent of how a person seeking to make a candle in accordance with the disclosure of your patent should make sure that it would drip?

A. I think any candle maker knows how to make a candle drip, more or less.

Q. I didn't ask you that, sir. I asked you if there is any disclosure in your patent as to how to make it drip.

A. No, not that I know of.

Q. During the pendency of your patent before the Patent Office, did you conduct any experiments in order to inform your counsel as to whether or not metallic salts in the wick of a candle would color the drippings? A. No.

Q. Did you make any statements to your counsel

(Testimony of Lester F. Wilson.)

as to whether or not metallic salts in the wick of a candle would color the drippings? A. No.

Q. Did you know whether or not metallic salts in the wick of a candle would color the drippings?

A. No. [67]

Q. Do you know today whether copper acetate in the wick of a candle will color the drippings?

A. I am not a chemist.

Q. I am not either, but I know the answer to that question. I am asking you, do you know?

A. I don't know—I wouldn't know unless I had a container marked "copper acetate"—I don't know what copper acetate is—and tried it. If it was properly labeled and I tried it and knew it at the time.

I have heard a lot of these names, but I don't know one from the other.

Q. In your Magi-Colored candles, do you use a green dye? A. Yes.

Q. What do you use to make the green dye?

A. I use a dye put out by Ciba Company. Mr. White, I believe, has a sample of that. And it is called, if I remember right, Candle Emerald Green.

Q. Do you know the composition of that dye?

A. It is a candle dye. As I say, I am not a chemist, I don't know the composition of any of them.

Mr. Lyon: I have no further questions.

The Court: Redirect?

Mr. White: Very briefly, your Honor.

(Testimony of Lester F. Wilson.)

Redirect Examination

Q. (By Mr. White): In connection with this little slip to which counsel has referred, now identified as Exhibit 4-D, when these candles are placed in a holder, do they burn down into the holder?

A. The original candle will if it is left lighted.

Q. So in accordance with the slip, once it is burned down into the holder and you have a hole to put another candle in, you may do so?

A. Yes.

Mr. White: I believe that is all, Mr. Wilson.

The Court: Step down.

Next witness.

Mr. White: At this time, your Honor, I would like to read into the record certain interrogatories and their answers.

The Court: Very well.

Mr. White: I refer to Defendant's Answers to Interrogatories. There were 20 interrogatories, all to which were given answers. At this time there are certain interrogatories and their answers which I should like to read.

The first is Question No. 1: "Concerning the allegations in paragraph 8 of the Answer, state whether to defendant's knowledge a candle defined as follows: [70]

"A drip candle having a wax body and containing within its interior different wax-soluble dyes at different locations longitudinally of the body, the different dyes being concealed within the candle body and being undissolved in any substantial

portion of the body wax before the candle is burned, the dyes dissolving in the said portion of the body wax as the candle burns with resultant formation of a composite of different colored drippings as the candle progressively burns.

"A. Had prior to March 13, 1945, been manufactured in the United States, other than by plaintiff, and if so, state:

"1. The name and address of the manufacture;

"2. The time of manufacture; and

"3. The manufacturer's identification of all such candles.

"B. Had prior to March 13, 1945, been sold in the United States, other than by plaintiff, and if so, state:

"1. The name and address of the seller;

"2. The time of sale; and

"3. The seller's identification of all such candles.

"Answer: A. No. [71]

"Answer: B. No.

"Question Two:

"Concerning the allegations in paragraph 8 of the Answer, state whether to defendant's knowledge, a wax body candle containing and concealed within its interior before burning, different wax coloring materials at different longitudinal locations in the candle body and undissolved in a substantial portion of the body wax, in a manner such that upon burning the candle forms a composite of different colored drippings which become colored by said wax coloring materials.

"A. Had prior to March 13, 1945, been manu-

factured in the United States, other than by plaintiff, and is so, state:

"1. The name and address of the manufacturer;

"2. The time of manufacture; and

"3. The manufacturer's identification of all such candles.

"B. Had prior to March 13, 1945, been sold in the United States, other than by plaintiff, and if so, state:

"1. The name and address of the seller;

"2. The time of the sale; and

"3. The seller's identification of all such candles. [72]

"Answer: A. No.

"Answer: B. No." [73]

Going now to question 5:

"(a) Has defendant within six years prior to the filing of the complaint herein, manufactured and sold candles as defined in Interrogatory I?

"(b) If the answer is in the affirmative, state fully with respect to all different candles so made and sold, the composition of each and every part of and material contained in the candles, and the procedure of making them.

"(c) And state further if the answer to 5(a) above is in the affirmative, the times throughout which all specified compositions were manufactured and sold.

"Answer: The answer to Interrogatory X.

"Question 6: (a) Has defendant within six years prior to the filing of the complaint herein,

manufactured and sold candles as defined in Interrogatory II?"

The Court: What is the answer to Interrogatory V? Do you have to lead up to that?

Mr. White: I propose, your Honor, to come to Interrogatory No. X and we will find in that the defendant's answer to all of this.

The Court: Very well.

Mr. White: Continuing: [74]

"(b) If the answer is in the affirmative state fully with respect to all different candles so made and sold, the composition of each and every part of and material contained in the candles and the procedure of making them.

"(c) State further if the answer to 6(a) above is in the affirmative, the times throughout which all specified compositions were manufactured and sold.

"Answer: See answer to Interrogatory X.

"Question 7: If defendant refers in its answer to Interrogatory V, to any candle of its manufacture and sale, state whether defendant knew of any manufacture, use, sale, or description of a similar multiple color drip candle, (other than those manufactured or sold or described by plaintiff herein) prior to defendant's manufacture and sale thereof, and if so, identify fully the prior manufacturer, user, seller of source of description.

"Answer: No.

"Question 8: If defendant refers in its answer to Interrogatory VI, to any candle of its manufacture and sale, state whether defendant knew of

any manufacture, use, sale or description of a[75] similar multiple-color drip candle (other than those manufactured or sold or described by plaintiff herein) prior to defendant's manufacture and sale thereof, and if so, identify fully the prior manufacturer, user, seller of source of description.

"Answer: No.

"Question 9: (a) Was defendant making and selling on or about April 26, 1950, a multiple color drip candle under the name 'Make-a-Rainbow candles'?

"(b) Did defendant make or sell prior to its manufacture and sale of 'Make-a-Rainbow candles' any similar candle capable of forming rainbow color combinations or drippings, and if so specifically identify such similar candle.

"(c) Did defendant, its agents, officers or employees have knowledge of plaintiff's 'Magi-Color' drip candle prior to defendant's manufacture or sale of its 'Make-a-Rainbow candles'?

"Answer: (a) Yes.

"(b) Yes; Emkay 1411.

"(c) No."

Mr. Lyon: Your Honor please, I offer at this time for identification an Emkay 1411 candle as Defendant's Exhibit—I guess it will be Q.

The Clerk: Exhibit P. [76]

The Court: Any objection?

Mr. White: No.

May I see that candle, please?

(The exhibit referred to was marked Defendant's Exhibit P for identification.)

Mr. White: No objection to its being admitted, your Honor.

Mr. Lyon: Then I offer it in evidence.

The Court: It is admitted.

(The exhibit previously marked Defendant's Exhibit P for identification was received in evidence.)

Mr. White: I wish to question Mr. Muench concerning it, however.

Do you happen to have an extra one of those, counsel?

Mr. Lyon: I have a couple of them back at the office. I may have an extra one here.

Yes, here is another one made of a different color.

(The exhibit referred to was passed to counsel.)

Mr. Lyon: Of course the one I gave you there is a different set of colors than the one that is in evidence.

Mr. White: But they were made the same way?

Mr. Lyon: Yes.

Mr. White: And differ only in coloring?

Mr. Lyon: Yes.

Mr. White: Now we come to Question 10 and its answer. [77]

"Question 10: (a) Is the following a true statement concerning defendant's activities up to August 1, 1953?

"From May 17, 1949, to and including September 5, 1952, Muench Kruezer Candle Company

manufactured and sold under the trade-mark 'Make-a-Rainbow' candles which were provided with cotton wicks in which were incorporated various types of aniline dyes disposed successively in different portions of the wick so that on burning the candle presented successively different colored drippings.

"This candle was discontinued September 5, 1952, and all models have been disposed of so that none is available from the defendant for production. Since September 5, 1952, defendant's candles have been manufactured by first dipping a wick to form a thin taper of substantially one-fourth inch thickness upon which there is then painted in successive spaced portions molten wax containing aniline dyes of different colors. The candle is then finished by further dipping to produce the finished candle, having the colored wax portions covered by uncolored wax.

"The percentage of aniline dye to wax in the material which is painted upon the thin taper [78] is within the range of percentage of due to wax customarily used by defendant and other candle makers in making solid-colored candles. These candles have been sold under the trade-mark 'Make-a-Rainbow' and were recently under the trade-mark 'Color Fall.' Such candles have been sold from September 5, 1952, to date (i.e. August 1953).

"(b) If the foregoing quoted statement is incorrect in any respect please state wherein it requires correction.

"(c) If defendant has manufactured or sold

subsequent to August 1, 1953, any candles of the same type as its 'Make-a-Rainbow' and 'Color Fall' candles but of different compositions, describe fully all such different compositions and the procedure of making them into candles, and give the name under which they have been sold.

"Answer: (a) Yes, with the explanation set forth in answer to Interrogatory 10(b).

"(b) At no time did the defendant manufacture a candle in which aniline dyes were directly incorporated in the wick. Defendant's practice, in accordance with the ancient 'muetter farben' (mother color) practice, was to use a colored wax which, in the period prior to 1952, was applied [79] directly to the wick and since said period has been applied to a thin taper or core. The statement in Interrogatory 10 concerning the range of percentage of dye to wax is really meaningless in that this percentage varies in accordance with the strength of the particular batch of dye, the type of the dye and the overall color desired. Mother color is, however, wax incorporating a rather concentrated dye.

"The body of the candles is a mixture of paraffine and stearic acid. The wick is braided cotton nine-ply.

"(c) Defendant has made no changes in its colored drip candles since August 1, 1953."

Now going over to Question 16. The others, your Honor, I am not reading into the record at this time because I think they will be better under-

standable in connection with what I expect to be the showings concerning prior art by defendant.

"Question 16: (a) To defendant's knowledge have candles manufactured as described in any of the patents referred to in Interrogatory 15, been sold in the market in the United States or any other country prior to 1945.

"(b) If the answer to the foregoing is in [80] the affirmative, state the name and address of all such manufacturers or sellers known to defendant.

"Answer: (a) No.

"(b) No answer required.

* * * * *

"Question 20: Describe and identify any candles (other than those manufactured by plaintiff) publicly sold on any market prior to defendant's 'Make-a-Rainbow' candle which upon burning produced similarly, in an unpredictable sequence by reason of the concealment of different coloring materials in the candle, a succession of distinctly and differently colored drippings resulting from the melting of at least a portion of the candle body wax and its acquisition of successively different colors which said portion of the wax did not have before melting.

"Answer: Defendant has no knowledge of any such candles."

Now I should like to question Mr. Muench as an adverse witness in connection with some of these deposition answers, if you please.

The Court: Come forward. [81]

NORBERT C. H. MUENCH

called as witness by and on behalf of the plaintiff, having been first duly sworn, was examined and testified as follows:

The Clerk: State your name, please.

The Witness: Norbert C. H. Muench.

The Clerk: Spell your first name.

The Witness: N-o-r-b-e-r-t.

The Clerk: And you last name.

The Witness: M-u-e-n-c-h.

The Clerk: Your address, please?

The Witness: Street address or just Syracuse, New York?

The Court: Your street address.

The Witness: 208 Twin Hills Drive, Syracuse, New York.

Direct Examination

Q. (By Mr. White): Mr. Muench, what is your relation with the defendant Muench-Kruezer Corporation in this action?

A. I am vice president of the corporation.

Q. How long have you been with the company?

A. Since its inception when we took over the Knapp Candle and Wax Company in 1925.

Q. When you say "we" you mean?

A. My brother and I and our families.

Q. How does the corporation happen to have the name Muench-Kruzer? [82]

A. Well, Muench is our surname and Kruezer, as we pronounce it but Kruezer as it is generally used, and that is where Emkay comes from, be-

(Testimony of Norbert C. H. Muench.)

cause it was more easily read. Mrs. Kruezer was my aunt.

Q. The predecessor of the present corporation was in the candle business how long, would you say?

A. I would say since 1910. You mean the Knapp Candle and Wax Company?

Q. Right. A. Yes.

Q. And the defendant corporation has continued that business up to date?

A. That is correct.

Q. Is not the defendant in this action one of the largest candle manufacturers in the United States?

A. Well, we would possibly be rated around either fourth or fifth, possibly as a pure candle company.

If you eliminate companies like Standard Oil of Indiana, which is a big oil company too.

Q. But among those companies engaged purely in the candle business, Muench-Kruezer rates what place in size, would you say?

A. I would say around fourth, third or fourth. I can't say exactly.

Q. Do other candle manufacturers have [83] ownership in Muench-Kruezer Corporation?

A. No, sir.

Q. What facilities, plant and personnel, Mr. Muench, does the defendant maintain at Syracuse?

A. You mean our company?

Q. Yes.

A. We have a manufacturing plant there con-

(Testimony of Norbert C. H. Muench.)

sisting of a company that makes molded candles, handmade candles, beeswax candles — in fact, all types of candles.

Q. How many people do you have?

A. In the neighborhood of 200.

Q. Do you have a laboratory?

A. A partime laboratory. [84]

Q. Is experimentation on candles conducted in that laboratory? A. Will you repeat that?

Q. Experimentation on candles conducted in that laboratory? A. Yes.

Q. What has been your personal experience in the making, actual making of candles?

A. Well, I started in 1910 and worked through the different departments from the beginning, up.

Q. You experienced all phases of the manufacturing end of the business?

A. Yes, sir, excepting, I might add with Mr. Wilson, I am not a chemist, either.

Q. Generally, what different kinds of candles does your company manufacture and sell?

A. We manufacture beeswax candles, stearic acid candles, paraffine candles, novelty candles, and anything like that in the candle line, commercial candles and church candles.

The Court: Do you make tallow candles any more?

The Witness: No, sir. They are known today as stearic acid candles, which is the purification of tallow into a waxy substance known as stearic acid.

Q. (By Mr. White): Do you make some [85]

(Testimony of Norbert C. H. Muench.)

candles that drip little and some candles that drip profusely? Is that not right?

A. Of course, the draft a good deal controls it, as was shown here with these candles. And also, incidentally, the size of the wick that is contained in those. These candles particularly made to drip are made with a very small wick.

Q. But your company has been making both types? This would be what you might call a profusely dripping candle, is that not right?

A. Yes, sir.

Q. And your company manufactures those which drip little, and the candles which drip a good deal; is that not right?

A. Well, you might say that, yes.

The Court: The larger the wick, the less drip?

The Witness: No. It is controlled a good deal by the diameter of the candle as to the size of the wick. For instance, a paschal candle that is used at Easter Time in the Roman and Greek Catholic Churches may be a candle as large as three inches in diameter, and then it has a very large wick.

Incidentally, those type of candles, and the candles that are used primarily in church, have what we call a candle follower, because churches are usually drafty and they have a tendency to make the candles drip, and despite the fact that [86] we try to overcome that, the churches use what is known as a candle follower, which is made of either metal or glass, and it holds the drip of the candle inside of the cup of the candle.

(Testimony of Norbert C. H. Muench.)

Q. (By Mr. White): How long have you, as a candle manufacturer, known what makes candles drip?

A. Usually atmospheric conditions.

Q. How long have you, Mr. Muench, as a candle manufacturer, known what makes candles drip?

A. Possibly from the beginning of my inception in the candle business where I gradually learned the details of it.

Q. And that is general knowledge in the candle industry, isn't it, among candle manufacturers?

A. That is right.

Q. When did your company first make a Rainbow candle?

A. We experimented in 1948 with a multiple drip candle, but we brought it out in the market in the spring of 1949.

Q. You say you experimented in 1948 with a multiple drip candle? A. Yes, sir.

Q. How did you happen to so experiment?

A. How did I what?

Q. Let me first ask, when you say "we"; who experimented?

A. I mean our company, Muench Kruezer [87]

Q. You were acquainted with the experimentations, were you? A. Yes.

Q. Did you direct them?

A. Partially, through our superintendent, who carried on the intimate detail of it.

Q. You place that time, the commencement of the experimentation, as being about when?

(Testimony of Norbert C. H. Muench.)

A. About 1948. I know that, it was in 1948.

Q. That, to the best of your knowledge, was the time of the first endeavor by the defendant here to produce such a candle?

A. You mean with a multiple drip? We had produced, of course, single drips by using this Star Pillar candle No. 228, which we made originally with a red and a yellow and a green, depending on the time of the year. The red and the green for the fall season, and the yellow and the light green for the spring season.

Q. But——

A. They were supposed to drip that color.

Q. 1949 marks the first time when your company undertook to experiment towards the manufacture of a candle such as——

A. In 1948 we were experimenting. In 1949, the spring, we started to market Make-a-Rainbow candle. [88]

Q. That was the first experimentation toward the making of a candle like Exhibit 12, Plaintiff's Exhibit 12?

A. Multiple drip, in 1948.

The Court: We will have the afternoon recess.

(Recess taken.)

Q. (By Mr. White): Mr. Muench, do you know why your company happened to enter into the experimentation in 1948 for the making of a multicolor drip candle?

A. Mr. White, with the novelty line, we are constantly entering into experiments. We carry on ex-

(Testimony of Norbert C. H. Muench.)

periments in different forms, shapes, and manners. In fact, the very word "novelty" candles means a change, and we are constantly changing the designs, and the usages of candles.

Incidentally, this candle is a novelty, too. That may explain some of the dropping off of the sale. We have those same experiences, too.

Q. At this time, 1948, approximately how many salesmen did your company have in the field?

A. Do you mean in the novelty line?

Q. Right.

The Court: Candle line.

The Witness: In the candle line we have two sets of salesmen, those that sell for the churches, which run in the neighborhood of between 15 and 20, and then with the novelty line we only have two or three that sell; but we sell, market [89] through outlets, through men in the field who handle their own company and handle maybe four or five lines.

The Court? Brokers?

The Witness: Brokers, like.

Q. (By Mr. White): Has it been the practice of your company to keep abreast of the new items on the market? A. Yes, of course. [90]

Q. As presented by your competitors?

A. You see, we not only try to keep them but certain accessories that go with it. For instance, in the last three years we also had wrought iron line and things like that that complement the candle, candle sticks, ash trays, and things like that, that we many times add in with a combination.

(Testimony of Norbert C. H. Muench.)

Q. Perhaps I didn't make my question clear. In 1948 was it not the practice of your company to acquaint itself with the merchandise in the candle field being sold by your competitors?

A. We naturally run into these different lines, and we may be a little egotistical, but I like to feel that we lead the line rather than follow anybody.

Q. That didn't happen in this case, though, did it? A. Well, I don't know about this.

The Court: That is argumentative, counsel.

Mr. White: I am sorry, your Honor.

Q. Who first authorized and directed the experimentation leading to the Make-a-Rainbow candle?

A. Mr. White, most of these ideas come naturally, and I can't answer that as to who was the first one who authorized it. I certainly know that with this Edwards deal that you saw there, we knew nothing about that.

Q. Who would you say in your organization, if such [91] is the case, originated your Make-a-Rainbow candle?

A. I can't answer that definitely. It seemed to be a development rather than somebody originating it, and I couldn't say.

The Court: Do you know the Edwards Company in Syracuse?

The Witness: Yes, sir. They are a large department store. They handle four or five different lines of candles.

Q. (By Mr. White): Do they handle your candles?

(Testimony of Norbert C. H. Muench.)

A. Some of them. It is sort of an on and off again arrangement.

Q. Do your salesmen call on them?

A. Yes, certainly, at different times.

You know, a department store many times you will have two or three departments that handle candles. Now the china department many times handles them and sometimes the lamp department. Sometimes there is competitive lines in the different departments.

Q. But your company was then selling other novelty candles, was it not? A. Yes.

Q. And selling to that retail outlet?

A. Sometimes; yes; sometimes, no. Sometimes it was one of the other companies who were in there rather than us. [92]

Q. Mr. Muench, when did you personally first have knowledge of the Wilson patent in suit here?

A. The Wilson candle, drip candle?

The Court: No, the patent.

Q. (By Mr. White): The Wilson patent?

A. The patent?

Q. Yes.

A. It was in September of 1949, a company down at Long Beach—I think maybe Mr. Wilson knows—I think it is known as I. S. & S., and they wrote us a letter asking about it because our Make-a-Rainbow candle was on the market. And I wrote them and said that I hadn't heard of it, and asked them to send me a copy of the patent, if possible,

(Testimony of Norbert C. H. Muench.)

which they did, which I turned over to our patent attorney at the time.

Q. Do you have available that correspondence?

A. Yes, I have.

Q. Would you furnish me with copies of it, please?

The Court: Do you have it here?

Mr. Lyon: I think the witness has it.

The Witness: I have it.

Mr. White: Correspondence which will include the inquiry to you or your company concerning the accusation of an infringement made by Mr. Wilson against the Long Beach [93] company.

The Witness: I haven't that; all I have is the letter that this gentleman wrote.

Mr. White: At approximately what time was that, Mr. Muench?

The Witness: I believe it was in September 1949.

(Exhibiting document to counsel.) [94]

Mr. White: Counsel has handed me——

The Court: Do you service any of the accounts yourself, your accounts?

The Witness: Personally?

The Court: Yes.

The Witness: No, sir.

The Court: You don't go on the road?

The Witness: No, sir.

Q. (By Mr. White): Counsel has handed me clipped together three letters, and a special delivery envelope, the envelope postmarked September 19, 1949. The first letter in order of time is a letter

(Testimony of Norbert C. H. Muench.)

under the heading I. S. & S. Products Coordinators, 1662 West 15th Street, Long Beach 13, California. This letter, air mail special delivery, directed to Emkay Candles, Division of Muench Kruezer Candle Company, Syracuse 1, New York, attention General Manager.

"Dear Sir:

"Referring to your Make-a-Rainbow candle which we saw advertised in your catalog, page 19, we wish to advise as follows:

"We are a distributor of houseware and gift ware merchandise, and candles are one of our lines. We were selling a candle similar to your above-mentioned one, but we were notified by the Orange Lite Candle Company of San Gabriel, [95] California, that a patent had been issued to their Mr. Wilson on the candle, and we were requested to discontinue the sale of same.

"You have undoubtedly checked the validity of this patent, and if so, we would like very much your advising us the status of same, or your findings with reference to its validity.

"Your reply will be greatly appreciated.

"Yours very sincerely,

"I. S. & S. Products,

"Carl T. Bolen, General Manager."

Your reply, Mr. Muench, next, dated September 23, 1949, air mail.

"I. S. & S. Products

"Attention: Mr. Carl T. Bolen

"Long Beach, California

(Testimony of Norbert C. H. Muench.)

"Dear Mr. Bolen:

"We have your letter of September 19 in regard to a patent allegedly held by Orange Lite Candle Company of San Gabriel, California, in reference to multicolor drip candles. We are not aware of any patent on this type of candle and therefore cannot help you. If you have a copy of this patent, we would appreciate your sending it to us. [96]

"Awaiting your reply, we are,

"Yours very truly,

"Muench Kruezer Candle Company

"By Norbert C. H. Muench."

The third letter under the letterhead of I. S. & S. Products, dated September 28, 1949, directed to Muench Kruezer Candle Company, attention Mr. Norbert C. H. Muench.

"Dear Mr. Muench:

"Thank you for your letter of the 23rd regarding the color drip candles.

"Enclosed herewith is a copy of the patent Mr. Wilson sent to us with his request for us to discontinue the sale of the color drip candles.

"We would appreciate your examining the patent and returning same to us with your comments and/or opinion of the validity of the patent.

"Your prompt reply will be appreciated.

"Yours very sincerely,

"I. S. & S. Products,

"Carl T. Bolen, General Manager."

Did you reply to that, Mr. Muench?

A. I turned the thing over to our patent attor-

(Testimony of Norbert C. H. Muench.)

ney, and you know how patent attorneys are, Mr. White. I never got around to answering that.

Q. I will accept the implications. [97]

The Court: You mean you don't know what he did with it?

The Witness: I know I didn't get a prompt reply.

Q. (By Mr. White): Do you know actually what he did about it?

A. Well, he investigated, and I think he made a search at that time, which took quite some time.

The Court: Did he give you a written opinion as to whether or not the patent was valid?

The Witness: He wrote in regard to the Fredericks patent, and he was investigating that patent, and from his point of view the Wilson patent was not valid due to this prior art.

The Court: That is what he advised you?

The Witness: Well, that is what the development was at that time.

The Court: Did he advise you of that?

The Witness: Yes, I think he did advise us of that, that it was prior art.

The Court: By a letter?

The Witness: No. We usually telephoned a good deal on that.

Q. (By Mr. White): Who was that, Mr. Muench?

A. Frederick Bodel, who has died since.

Q. Do you happen to know what I. S. & S. Products, Mr. Carl T. Bolen, did in response to Mr. Wilson's charge of [98] infringement?

(Testimony of Norbert C. H. Muench.)

A. No. That is the only correspondence I have had with him. I never heard from him since.

Q. But you had knowledge of the Wilson patent——

The Court: I can tell it has been asked and answered the way you are starting out now, "You had knowledge of it on the date of those letters?" Of course he had. He just got through saying that.

Mr. White: Thank you, your Honor.

Mr. Lyon: Do you intend to offer them in evidence?

Mr. White: I have read them into the record.

Q. (By Mr. White): Mr. Muench, when did the Make-a-Rainbow candle actually come out on the market?

A. It was in the spring around May of 1949 when we first started to sell them.

Q. As I recall, your experimentation led to the making of that candle by——

The Court: Which one is that?

Mr. White: The manufacture——

The Court: 13?

Mr. White: Yes. Or this is probably a closer resemblance, would you not say? "This" being Plaintiff's Exhibit 12.

The Witness: Yes.

The Court: Let me see it. [99]

The Witness: That was the first one we got out.

The Court: Exhibit 12 was the first one you got out, and you sold that in the spring of 1949?

The Witness: The spring of 1949.

Q. (By Mr. White): Is it not true, Mr. Muench,

(Testimony of Norbert C. H. Muench.)

that that candle did not come along until later? Has it not been stated that you destroyed all the samples of the first candle? And we do not represent those to be the first ones.

A. I see what you mean. This was the core candle, as you say, and the one we put the colored wax or the muetter farben on the wick was the first one that we produced and sold.

The Court: That is the one you discontinued?

The Witness: Yes. September 5, 1952.

The Court: How many of those did you sell, do you know?

The Witness: Not too many. I don't remember exactly, though.

The Court: I don't know how many "too many" is. A million?

The Witness: No, no. Taking a tenth of that, I think it was less than a tenth of that, maybe 100,000.

Q. (By Mr. White): They were manufactured and distributed generally throughout the United States, were they not?

A. Yes, sir. [100]

Q. As you manufactured that candle, dye dissolved in wax?

The Court: Wait a minute. As he manufactured it—do you mean during the time that he was manufacturing it?

Mr. White: No. I am getting at the way the candle was made, your Honor.

Q. (By Mr. White): Was it not made by applying directly to a candle wax——.

(Testimony of Norbert C. H. Muench.)

Mr. Lyon: Candle wick, do you mean?

Q. (By Mr. White): Candle wick, thank you, different dye wax solutions at successive locations along the wick?

A. This mother color that we used at that time—you see that has a background prior to this. It goes way back to the years—

The Court: His point was whether or not you put it on the wick.

The Witness: This colored wax we put on the wick.

The Court: And that has been admitted in your answers.

Q. (By Mr. White): Was it not done essentially in this manner, and I read from column 3, lines 30 to 33 of the Wilson patent:

"By incorporating the dye in a relatively high melting point wax and applying the resulting melted mixture to the wick, the dye is effectively confined upon solidification of the wax." [101]

That is substantially what happened in the manufacture of your first Make-a-Rainbow candle, is it not?

A. Yes, with the colored wax applied. [102]

Q. Then you dip those candles and build them up to the desired diameter?

A. That is right.

Q. I will ask you to confirm, if you will, Mr. Muench, that Plaintiff's Exhibit 10 is a photostat of my letter of April 26, 1950, to you, your company, charging infringement of the patent in suit——

(Testimony of Norbert C. H. Muench.)

Mr. Lyon: So stipulated.

Q. (By Mr. White): ——and that Exhibit 11 is your reply dated May 3, 1950, acknowledging receipt of my letter and stating that the matter was being referred.

The Court: It has been so stipulated. Counsel has stipulated.

The Witness: That is my signature.

Mr. White: Thank you.

The Court: They are already in evidence anyhow.

Q. (By Mr. White): Referring now to Plaintiff's Exhibit 16, which is your catalog No. 83, approximately how long has that catalog, containing pages corresponding to pages 3 and the rear page, the back side of it, been in publication?

A. I think that was copyrighted in 1953. It is marked on there.

Q. Did you publish a similar showing of the [103] Make-a-Rainbow candle prior to that?

A. I am not sure whether it is in our catalog. I imagine it might be, but I am not sure whether it was in the 1952 catalog.

Mr. Lyon: Mr. White, for your information we will offer copies of each of the Emkay catalogs from 1940 to date as part of our case.

Mr. White: Thank you.

Q. One further question, Mr. Muench. I don't want to try to anticipate the defense, but inasmuch as you mentioned during the course of your testi-

(Testimony of Norbert C. H. Muench.)

mony this star pillarcandle here, Defendant's Exhibit F, may I inquire, is that a stock candle?

A. Yes, sir.

Q. You took that out of stock?

A. That is our No. 228.

Q. And as a stock candle it shows at its end a red core. A. A red core.

Q. So anyone purchasing and undertaking to use the candle will know exactly what color it drips, is that not right? A. That is right.

Mr. White: That is all. Thank you.

The Court: Step down. [104]

(Witness excused.)

Mr. White: That concludes the presentation of the plaintiff's case, your Honor.

The Court: The plaintiff rests?

Mr. White: Yes, your Honor.

The Court: Very well.

What is this Color Fountain candle on page 21, does that have anything to do with yours?

Mr. Muench: The Color Fountain is not a multi-drip candle, your Honor, it is a single drip.

The Court: Very well.

Mr. Lyon: At this time, your Honor, I offer as defendant's Exhibit B a stipulation between myself and counsel as to the use in the prior art of aniline dyes and metallic salts for the coloring of candles, and also as to a true and correct translation of the German patent to Hausamann, No. 157,209, one of the patents relied upon in the answer.

(The document referred to was received in evidence and marked Defendant's Exhibit B.) [See Book of Exhibits.]

Mr. Lyon: As Defendant's Exhibit C we offer a certified copy, certified by the Patent Office, of Emkay Catalog No. 50, with certification that a copy of such publication was received in Division 30 of the Patent Office January 14, 1943.

I call your Honor's particular attention to the matter [105] appearing under the 228, referring to the star pillar candle.

The Court: Was this filed in the Patent Office in this proceeding?

Mr. Lyon: No, your Honor. The Patent Office maintains a library and that is a certificate to the effect that that publication was received in their library and was available to the patent examiners as of that date. [106]

You will note that it refers to a Star Pillar candle.

The Court: Christmas red or Christmas green, also white with red center. The latter candle drips red colored wax over the white outer shell, giving a translucent glow. Individually packaged, base not included, each $1.00.

Mr. Lyon: At the same time I offer——

The Clerk: Admitted, your Honor?

The Court: Admitted.

The Clerk: That is B and C.

The Court: By the way, the stipulation, Exhibit B, is approved by the court, and is admitted in evidence.

(The exhibit referred to was received in evidence and marked as Defendant's Exhibit C.)

Mr. Lyon: Now we offer as Defendant's Exhibit F the Star Pillar candle.

The Court. The Star Pillar candle with red center, is that right?

Mr. Lyon: That is right. We will burn that candle tomorrow.

The Clerk: Admitted?

The Court: Admitted.

(The exhibit referred to was received in evidence and marked as Defendant's Exhibit F.)

Mr. Lyon: As Defendant's Exhibit A, we offer the prior art, a book of prior art, if it hasn't already been admitted. [107]

The Clerk: It has been admitted.

Mr. White: A is the prior art?

Mr. Lyon: That is right.

At this time, your Honor, I would like to call your attention to——

The Court: I read Mr. White's brief and I have read the opinion of the Court of Appeals during the noon recess.

Mr. Lyon: I would like to call your Honor's attention particularly to paper No. 6 in the file wrapper.

The Court: What page?

Mr. Lyon: Page 16, 15——

The Court: 15 and 16?

Mr. Lyon: It actually begins on 13.

The Court: Los Angeles, California, March 11th, is that it?

Mr. Lyon: That is right. That is what I want to refer to.

The Court: Commissioner of Patents, Washington, D. C.?

Mr. Lyon: Yes, your Honor.

I want to call your Honor's attention particularly to claims 15, 16, 17 and 18 as they appear in that amendment.

The Court: Let me see, 15, 16 and 17 were disallowed?

Mr. Lyon: That is correct.

The Court: And 18, 19, 20, 21, 22, and 23 were finally allowed as claims 1, 2, 3, 4, and 5, and I correct? [108]

Mr. Lyon: That is right.

And you will note that with respect to claim 18——

The Court: Well, now, you said you wanted to call my attention to claim 15, so let me give my attention to claim 15.

Mr. Lyon: All right.

The Court: Yes?

Mr. Lyon: It is my contention that those claims, claims 15, 16, 17 and 18, prior to the amendment which appears in claim 18 in ink, those claims are claims which have the scope which Mr. White is now seeking to argue for the claims as allowed, and that those claims——

The Court: I wonder if I might make this observation, subject to correction by counsel.

In reading the patent in suit, claims 2, 3, 4 and 5

all relate to the application of the coloring material to the wick.

Mr. Lyon: That is right.

The Court: Claim No. 1 is the only one that is not so limited. Am I correct?

Mr. White: That is correct, your Honor.

Mr. Lyon: And claim No. 1 says that the dye is normally undissolved in the wax of said body, and that is the amendment that was added to the claim after the claim was rejected in its original form, and by elementary law of [109] file wrapper estoppel, that is the gist of the claim from then on in, it is thing that got it allowed.

So if we have a dye normally dissolved by the wax in the body we cannot infringe that claim. To hold otherwise would be to give him the scope which the claim would have had prior to the insertion, or the scope of claims 15, 16 and 17, which are silent as to where the dye is placed in the candle.

So we have in this case a file wrapper estoppel which, in my opinion, clearly frees current production from any claim of infringement of this patent.

But I wanted to call those particular things in the file wrapper to your attention.

The Court: Or stated in other words, your position is that the candles which are manufactured by the defendant, of which the Star Pillar is an example, I mean with one colored casing and another colored interior, does not infringe claim 1.

Mr. Lyon: Oh, no, that is not my position at all. It has nothing to do with the Star Pillar candle. The Star Pillar candle, as you can see from the cat-

alog, has been manufactured by the defendant since 1940.

The Court: Why do you want to burn it then?

Mr. Lyon: It is prior art.

The Court: It only has one color. [110]

Mr. Lyon: It only has one color.

The Court: And this has to do with multicolor, all these.

Mr. Lyon: That is right.

The Court: Well, then, what candle is it—it is this No. 13?

Mr. Lyon: That is right.

The Court: Candle No. 13?

Mr. Lyon: Yes, your Honor.

The Court: That is what you call your current production?

Mr. Lyon: That is correct, since September 5, 1952, when we ceased applying the muetter farben to the wick.

I am ready to proceed but I see it is now 4:00 o'clock. I can put Mr. Muench on and start the defendant's case.

The Court: Are you hinting that maybe the court should adjourn?

Mr. Lyon: Well, I will proceed if you like.

The Court: We will recess until 10:00 o'clock tomorrow morning.

How many witnesses will you have?

Mr. Lyon: Mr. Muench only.

The Court: Without prejudicing your right to

defense or the plaintiff's rights here, are not the issues narrowed down as to whether or not there is an infringement of claim [111] 1, whether claim 1 is valid and there is an infringement of it? Is that not the issue? The defendant admits the rest of it is infringed. You admit the rest of them are infringed, do you not?

Mr. Lyon: They were infringed prior to 1952, if valid.

Mr. White: As I understand it, the defendant will deny validity of all claims in the patent. It admits infringement of the patent through the first manufacture of the Make-a-Rainbow candle, and it is now denying infringement on the basis of, what shall we say, its current production.

The Court: Very well.

Recess until 10:00 o'clock tomorrow morning.

(Whereupon, at 4:00 o'clock p.m., an adjournment was taken until 10:00 o'clock a.m., Wednesday, March 21, 1956.)

The Court: Ex parte?

The Clerk: No, your Honor.

The Court: Proceed.

Mr. Lyon: Mr. Muench.

The Court: You were sworn yesterday.

Mr. Muench: Yes.

The Court: You pronounced your name a little differently than we have been pronouncing it. What is the correct name?

Mr. Muench: It rhymes with lynch.

NORBERT C. H. MUENCH

called as witness herein by and on behalf of the defendants, having been heretofore duly sworn, was examined and testified as follows:

Direct Examination

Q. (By Mr. Lyon): Mr. Muench, will you briefly sketch your training and schooling with respect to the art of candle making?

A. Well, I began as a comparatively young man in 1910, working up through the various departments of the company in the making of all kinds of candles.

Q. This was with the Will & Baumer Company?

A. Will & Baumer Company in 1910, and worked through the various departments, and then was made an assistant [114] superintendent, and then superintendent. In 1925 my brother Alexis and I withdrew from the Will & Baumer Company, and our family purchased the controlling interest of the Knapp Candle Company and we then changed the name to Muench-Kreuzer Candle Company, and we have been operating over there since.

We have no active connection with the Will & Baumer Company at all. In fact, we are competitors of theirs.

Q. Was your father a candlemaker?

A. In his early days when he came over from Europe, that was in 1867, right after the Civil War.

Q. That is your grandfather? A. What?

Q. That is your grandfather?

A. No. That is my father. My grandfather, on

(Testimony of Norbert C. H. Muench.)

my maternal side, came over before the Civil War, around in the 1840s, but he was not in the candle busines then. He didn't go into the candle business until after the Civil War.

Q. But your grandfather and your father actually were in the candle business, is that correct?

A. Yes.

Q. How about the other members of your family, they are all candlemakers, too, aren't they?

A. Not all of them. Some of them are doctors, one was a druggist, one was in the oil business.

Q. What I am trying to bring out is candlemaking is a [115] tradition in your family, isn't that correct?

A. Yes, it is, a great number of the family are connected with it.

Q. Have you made a study of the various prior art patents that have been pleaded in the answer in this case?

A. If you mean these patents like the Nelson——

Q. Nelson, Fredericks, Sterry, and so on.

A. Yes, I have.

Q. Refer now to Defendant's Exhibit A and I will ask you to refer particularly to the patent to Nelson, No. 1,908,044. I believe you have made some notes in your own handwriting as to disclosures in these patents, and I wish you to explain to the court what the Nelson patent teaches and its relevance to the Wilson patent in suit.

A. The Nelson patent was originally taken out to get protection on a colored flame candle, and in

(Testimony of Norbert C. H. Muench.)

testing out these patents like the Nelson and the Fredericks, particularly, I found that they made a better colored drip candle than they did a colored flame candle. [116]

Q. Well, now, what does Nelson disclose as to how he forms a candle?

A. Well, he soaked successive portions of wick in a saturated solution of metallic salts and allowed that to dry, and then he added to it some coatings of candle wax or paraffine, which is a candle wax, and with some of these metallic salts held in suspension.

After that he coated the candle with succeeding layers of candle wax until he had a candle.

Q. Have you made any samples of candle in accordance with you conception of the teachings of the Nelson patent? A. I did.

Q. Will you select from that box I just handed you a sample of a candle as just referred to, and tell me what it is made of, who made it and further identify it?

A. You, I presume, want an unburned candle?

Q. An unburned Nelson, if you please.

A. Here is an unburned Nelson candle that I made on March 10, 1956.

Q. Will you describe how you made that?

The Court: What is it?

The Witness: What is it, your Honor?

Mr. Lyon: Pardon me.

The Court: He says, "Here is an unburned candle." What is the exhibit number? [117]

(Testimony of Norbert C. H. Muench.)

Mr. Lyon: We have already numbered these.

The Clerk: No. D, I believe it is.

Mr. Lyon: Exhibit D. The candle just identified by the witness is offered as Defendant's Exhibit D.

(The document referred to was marked Defendant's Exhibit D for identification.)

Mr. White: Do you have any duplicates of that, counsel?

Mr. Lyon: I believe I have.

Mr. White: I should like to have one.

Mr. Lyon: Do you have another one there, Mr. Muench?

The Witness: Yes.

(The candle referred to was passed to counsel.)

Q. (By Mr. Lyon): Will you describe the method of manufacturing that candle and the ingredients?

A. Beginning with 9-Ply wick, I soaked successive parts of the wick in a saturated solution of the following metallic salts:

Beginning with copper acetate, which was made by Mallinchrodt of New York City, the second was iron salts made by Du Pont, the third was copper chloride by Mallinchrodt, and the fourth was cadmium sulphide made by the Fisher Scientific Company of Pittsburgh.

After drying the [illegible] I immersed the wick in a wax mixture containing the same salt for each corresponding part and [118] allowed to harden.

(Testimony of Norbert C. H. Muench.)

I then dipped the prepared wick in candle stock to the desired size here.

Q. Would you light that candle, please?

A. (Lighting candle.)

The Court: You said you dipped this candle stock?

The Witness: Yes.

The Court: Is this the kind of candle stock that is non-drip or generally referred to as the drip stock?

The Witness: The stock isn't such that it would be non-drip. There aren't any candles made that in the draft really won't drip.

These candles are made particularly, as all these supposed multi-colored drip candles, with a small wick so they haven't the capacity to carry the amount of wax.

Any of these candles in a room that has no draft—for instance, with the so-called drip candles—if they are put in with a large wick, won't drip at all if there is no draft, so they are not really a dripping candle unless the wick is small.

The Court: That is what makes it drip?

The Witness: That is what makes it drip.

The Court: The size of the wick?

The Witness: The size of the wick. If there is a strong draft they will drip anyway with a large wick because in [119] burning the flame is supposed to stand upright. If there is a draft like you have here blowing the flame sideways, it heats the edge of the candle and melts down that edge and allows

(Testimony of Norbert C. H. Muench.)

the wax to drip out, whether it is white or colored or any anything else.

Q. (By Mr. Lyon): I notice that Exhibit D which you have now lighted is beginning to drip. Would you care to state for the record whether the dripping is colored dripping from the main body of the candle?

The Court: Quite obviously it is. I do not know whether it is green or blue.

What is it?

The Witness: I would say it was green.

Q. (By Mr. Lyon): Do you know what *alst* that is?

A. That is copper acetate that gives that color.

Copper acetate. incidentally is a metallic salt that we have used for years for coloring candles, all kinds.

The Court: There is none of that color in the wax of the candle, I mean it is just in the wick?

The Witness: Excepting for a small core where there was some mixed in, just a very small core next to the wick.

The Court: By "small" you mean?

The Witness: Less than a quarter of an inch.

Mr. White: Would the witness care to comment on the color of the flame?

The Witness: Occasionally, if you will notice it closely, you will get a very bluish or greenish—when it blows like that you will notice that greenish halo around there.

(Testimony of Norbert C. H. Muench.)

Mr. White: It looks to me like any other candle flame color.

The Witness: Possibly I am not as color-blind as you are, but that has the decided halo of green.

The Court: It does?

The Witness: Yes, sir. I think you have to get up closer to it in order to see it.

The Court: From where you are sitting it is the regular—what color—yellow flame, is that right?

The Witness: Most candle flames, in fact all candle flames, are yellow on account of the organic material from which they are made, which has a great deal of carbon in it. [121]

Q. (By Mr. Lyon): Mr. Muench, will you now turn your attention to the Fredericks patent No. 2,184,666, and explain the teachings of that patent to the court?

A. In manufacturing that according to the teachings——

Q. I didn't ask you that, Mr. Muench. I asked you what the patent in general shows.

A. The patent shows a candle made for the purpose of having a colored flame by using metallic salts of various kinds, by laying them alongside a wick, and then incorporating some of the salts longitudinally along the side of the wick.

Q. More than one salt, is that right?

A. Yes.

Q. The patent states that the flame is going to change color, is that right?

(Testimony of Norbert C. H. Muench.)

A. According to the salt used.

Q. Did you prepare a sample candle illustrating the teachings of the Fredericks patent?

A. I did.

Q. Will you pick one out? Do your have an extra one for Mr. White? A. Yes.

Mr. Lyon: Which I will offer in evidence as Defendant's Exhibit E.

The Witness: Do you see this green halo? [122]

Mr. White: The witness asked me a question, if I saw the green halo.

We have a rather heavy circulation of air from the conditioning system here, but to me the flame as represented in the Nelson patent as being azure does not appear to me, in perhaps my color-blind condition, but it does not appear to be an azure flame.

The Witness: You are standing far away. If you got closer to it, you would notice it.

Mr. Lyon: Never mind arguing with the attorney, Mr. Muench.

The Witness: Excuse me.

The Court: I think if you put it over this way, it wouldn't get so much draft. I don't know. The draftiest place in the court room is on the bench.

Mr. Lyon: Let the record show that I am now lighting Defendant's Exhibit E.

(The exhibit referred to was received in evidence and marked as Defendant's Exhibit E.)

Q. (By Mr. Lyon): Will you explain the manufacture—in the first place, Mr. Muench, you per-

(Testimony of Norbert C. H. Muench.)

sonally made these candles, Defendant's Exhibits D and E? A. Yes.

The Court: This other one, Defendant's Exhibit D, now has a flame—I think it is yellow and blue changes. [123]

Mr. Lyon: It is our position, your Honor, that though they were intended to be flame coloring candles, they are actually better drip candles.

Q. (By Mr. Lyon): Will you explain the manufacture of Defendant's Exhibit E, please?

A. I used a 9 ply wick. I first dipped the wick in paraffine to keep the wick straight. I then dipped a melted petrolatum. I then covered one side of the wick with salts in the following longitudinal order: Copper acetate made by Mallinckrodt, New York City; iron salts made by du Pont; copper chloride made by Mallinckrodt; and cadmium sulphite made by Fisher Scientific Company. I then dipped the coated wick in paraffine to seal in and hold the salts in place. I then dipped it in candle stock to the desired size.

Q. Will you refer to the Fredericks patent, and particularly to page 2, second column and recite some of the salts which Mr. Fredericks suggests can be used, at the lower right-hand corner.

A. Well, he recites the halides, the nitrates, nitrites, acetates, oxysalts, ammoniates, chlorates, perchlorates alcoholates, oxides and hydroxides, and other salts of sodium, potassium, lithium, boron, thorium, strontium, iron, copper, calcium, barium,

(Testimony of Norbert C. H. Muench.)

cerium, and also powdered aluminum and magnesium.

Q. Are the salts, with the possible exception of the [124] cadmium sulphide, that are in Defendant's Exhibits D and E, listed among those salts that you have just read off?

A. I believe they are, yes.

Q. Refer now to the patent to Field, the British patent to Field, No. 122, and explain the teachings of that patent.

A. The Field is a British patent whereby he provides several methods, but I used a method whereby, which is covered under his, where I took round rods and inserted in a mold and poured candle wax around the mold until it hardened and then I took the candle with the rods out of the mold and withdrew the rods and then poured colored wax into the hole.

Q. Is it fair to state that the Field patent shows alternate systems in one of which he paints different colored coloring on the outside in grooves on a candle, and in another of which, by means of the rods, he makes spaces in the candle in the body of the candle, which he can fill with different colored wax. A. That's right.

Q. I hand you a candle and ask if that is a candle prepared by you according to one of the methods taught in the Field patent.

A. Yes, this is what we call a Byzantine candle. It is ordinarily a candle with twisted ridges on the outside, one of many of that type of candle being

(Testimony of Norbert C. H. Muench.)

used and having been [125] used in the candle business for many years, and I laid color in the grooves of that candle as shown on this sample, and then dipped the candle into a white paraffine, in order to give it a finish. Of course, successive dips of candle stock on there would sort of cover up all those colors, so as to place them inside the body of the candle.

Q. May I interrupt a minute?

Do you care to make a statement for the record of the condition of Exhibits D and E at the present time?

A. Exhibit D has entered into the state of the iron salts, which gives the lighter color there. Exhibit—the Fredericks patent, Exhibit E, is apparently still in the copper acetate field there, burning down and dripping green colored wax.

Q. (By Mr. Lyon): It is obvious, however, that it is dripping a different colored dripping over the candle, the main body of the candle?

A. That is right.

Q. In both cases? A. Yes.

Q. You have found that Exhibit D has already changed colors at least twice, is that right?

A. Yes.

Mr. White: Is there much difference in the colors of the flames?

The Witness: No, because the organic material of which these candles are made is so basically superior that it will not color all of the yellow flame. That is the difficulty with making the colored flame candle.

(Testimony of Norbert C. H. Muench.)

Mr. Lyon: The candle just identified by the witness as representing one phase of the teaching of the Field British patent, No. 122, is offered as Defendant's Exhibit I-A.

The Court: I-A?

Mr. Lyon: Or I-1, I guess we had better make it.

The Court: Let us call it I-1.

(The exhibit referred to was marked Defendant's Exhibit I-1 for identification.) [127]

The Witness: I have made some samples here with the Field patent with the three colors cast inside.

Mr. Lyon: The candle just identified by the witness, the same being a Field candle with the three colors embodied in the body by means of apertures in the body formed by rods that were placed in the the body during the forming of the candle and then removed, then as I understand it you filled those aperatures with colored wax, is that correct?

The Witness: Yes.

Mr. Lyon: Let me have the burned one.

The Witness: (Passing exhibit to counsel.)

Mr. Lyon: This is offered as I-2.

(The exhibit referred to was marked Defendant's Exhibit I-2 for identification.)

Mr. Lyon: Your Honor will note the colored cores.

The Court: There are three colored cores.

Mr. Lyon: That is right.

The Court: But the wick is not colored?

The Witness: No.

(Testimony of Norbert C. H. Muench.)

Mr. Lyon: No.

If you want one of those, Mr. White, you may have one.

Mr. White: And there is no difference in the color combination longitudinally of the candle?

The Witness: You mean of the——

Mr. White: We have three wax-filled passages throughout [128] the candle.

The Witness: Yes.

Mr. White: Each of them contains the same coloring wax?

The Witness: Three different colors, one color in each aperture.

Mr. White: And therefore as the candle burns the waxes will melt and we will have the same color dripping throughout?

The Witness: No, they will blend.

Mr. White: They will blend?

The Witness: Yes.

Mr. White: They will blend but you have the same color throughout?

The Witness: The length of the candle.

Mr. White: You can see the colored shafts at the end of the candle, can you not?

The Witness: That is right.

Mr. White: So that you know what is in the candle?

The Witness: That is right.

The Court: And so you will know what it will do?

The Witness: Yes.

Q. (By Mr. Lyon): Mr. Muench, I hand you

(Testimony of Norbert C. H. Muench.)

what has been previously identified as Defendant's Exhibit F and ask you to tell me what that is and what the history of that candle is with respect to your organization. [129]

A. That is what we identify as a No. 228 Star Pillar candle.

We have had this in our line from approximately 1940 and have used it continuously since then because it has been a popular candle.

We made that in several ways, in the straight candle with a colored body, or outside, and then another one, which this is a representative sample of, with a white outside and a red core, the idea of the red core is to drip over the white when the candle is burned.

Mr. Lyon: We also have Defendant's Exhibit O, which the clerk has marked in evidence and the court reporter has merely identified or has marked it for identification. I will offer it in evidence.

(The exhibit heretofore marked Defendant's Exhibit O for identification was received in evidence.)

Q. (By Mr. Lyon): I will ask if you will describe what that is and tell me its history.

A. That is our No. 117 rope candle. We have had it in our line for approximately the same time as we have the No. 228 Star Pillar candle.

That is also made in various colors and along the same line as the Star Pillar candle, that is, with colored cores or without colored cores. [130]

Q. Let's take another look at Exhibits D and E.

(Testimony of Norbert C. H. Muench.)

It is quite obvious now that they have both changed colors in the drippings. A. Yes, sir.

Mr. Lyon: I think they have burned far enough. We want to have something left for the Court of Appeals to take a look at.

The Court: The flame on Exhibit D is now a yellow flame, and the flame on Exhibit E, it spits a little.

Mr. White: What color is it supposed to be, Mr. Muench?

The Witness: Well, the patentee I suppose wanted to have it as much as possible in the color from which he made the salts, but the hydrocarbon, which is the paraffine in there, is organic and it will always burn with a yellow flame, and that is predominant because it just works out that way. They never were able to overcome the yellow. That is due to the nature of the material.

Mr. White: In all practical effect, then, the patents are not operative to produce colors in their flames as the patentee represented them to.

Mr. Lyon: I will object to that. Just look at that candle burning right now, it is as blue as a flame can burn.

The Court: It is blue and yellow.

Mr. White: Just a moment. I asked him whether the candle would perform as the patentees represent them to perform [131] according to flame color.

The Court: When you get around to cross examining him you can ask him then.

Mr. White: Thank you.

(Testimony of Norbert C. H. Muench.)

Mr. Lyon: I think we had better blow these out to save the candles.

The Court: I had understood that they were going to produce different colors. All they have produced up to now is a green and then the white that is mixed with it.

Mr. Lyon: There are several different colors there.

The Court: Several different colors of melted wax?

Mr. Lyon: Yes.

The Witness: That candle is dripping on the side, your Honor. Don't hold it over to one side too much.

Mr. Lyon: Let them burn a little longer.

The Court: Is there supposed to be some red in there?

Mr. Lyon: No.

The Court: No red in either one of these candles, is that right?

The Witness: That is right.

The Court: The colors are shades of blue and green, is that right?

The Witness: That is right. Blue, green and that iron salt which gives the lighter color, but which is blended in and influenced by the green which started off the candle. [132]

The Court: I have blown out Exhibit E, for the record.

Mr. Lyon: Let us blow out Exhibit D.

(Testimony of Norbert C. H. Muench.)

The Court: Exhibit D is also blown out, for the record.

Mr. Lyon: I will offer Exhibits O and F in evidence.

The Court: Admitted.

(The exhibits referred to were received in evidence as Defendants' Exhibits O and F respectively.)

The Court: Let me see, the rope candle is Exhibit O?

Mr. Lyon: That is right.

The Clerk: D and E both admitted?

The Court: Admitted.

(The exhibits referred to were received in evidence as Defendants' Exhibits D and E, respectively.)

The Court: D, E, and F was admitted yesterday.

The Clerk: How about I?

The Court: I-1 and I-2 are admitted.

(The exhibits referred to were received in evidence as Defendants' Exhibits I-1 and I-2 respectively.)

Q. (By Mr. Lyon): Turning now to the patent to Housamann, the German patent, explain, if you will——

The Court: Let me see, that translation is in the stipulation there?

Mr. Lyon: That is right.

(The document referred to was passed to the court.) [133]

(Testimony of Norbert C. H. Muench.)

Q. (By Mr. Lyon): Will you explain the teachings of that patent?

A. The Housamann patent teaches a core of colored wax in order to distinguish a candle and to identify it. I made several candles up according to that teaching.

I again used a 9-ply wick and dipped them into candle wax colored with Du Pont aniline dye red.

I dipped the wick six or seven times to get a thickness of about one-quarter of an inch and then let it cool.

I then dipped these red cores in white candle wax until I obtained a candle of suitable thickness.

Q. You have in your hand a candle. Is that a candle made in accordance with the process you just described?

A. This candle was made by me according to the Housamann teaching.

Mr. Lyon: The candle identified by the witness is offered as Defendants' Exhibit H.

(The exhibit referred to was marked Defendants' Exhibit H for identification.)

Q. (By Mr. Lyon): That candle will drip what?

A. That particular candle will drip red. Of course if other colored dye were used it would drip according to the color of the dye.

Q. You have burned this candle and it is obvious that [134] it is dripping red over the white exterior, is that correct? A. Yes.

The Court: That is what exhibit?

The Clerk: Exhibit H.

(Testimony of Norbert C. H. Muench.)

The Court: Is it offered?

Mr. Lyon: Yes, sir.

The Court: It is admitted.

(The exhibits heretofore marked Defendants' Exhibit H for identification was received in evidence.)

Q. (By Mr. Lyon): Will you now refer to the British Patent No. '95, to Sterry, and explain briefly the teaching of that patent and the pertinency of that to this litigation?

A. That patent was apparently taken out to improve the appearance of the candle by taking a wick and ironing various analine colors into the wick with a hot iron.

Q. Did you make a candle in accordance with that teaching?

A. Yes, I used a 9-ply wick again and I ironed it to the wick with a small iron which I heated aniline colors in this order: analine blue, analine pink and analine violet, which I mentioned in the patent.

I then dipped these wicks in wax to make a candle

Q. I hand you a candle and ask you if that is a candle made by you in accordance with that description. [135]. A. Yes, this was made by me.

Q. Is that candle illustrative of your conception of the teachings of the British patent to Sterry?

A. Yes, it is.

Q. And it has been burned, I notice, and it has dripped through over a white body.

(Testimony of Norbert C. H. Muench.)

A. Yes.

Q. If we burned that further would it change color? A. Yes, it would.

The Court: You mean a different color?

The Witness: It would change to pink. I placed the analine colors in——

Mr. White: What was the third color?

The Witness: Violet.

The Court: Blue, pink and—that is blue now?

The Witness: It is blue now.

The Court: And it would change from pink to what?

The Witness: Then to violet.

Mr. Lyon: The candle just identified by the witness is offered in evidence as Defendants' Exhibit G.

The Court: Admitted.

(The exhibit referred to was received in evidence and marked Defendants' Exhibit G.)

Mr. White: Do you have an extra of that candle, counsel?

Mr. Lyon: I think we have. [136]

Q. You have on your table there a series of booklets—— A. Catalogs.

Q. Catalogs? A. Yes.

Q. What are those?

A. These are the catalogs which we have issued for our novelty candles and colored candles from year to year. [137]

Q. Covering what years?

A. Since beginning 1940.

(Testimony of Norbert C. H. Muench.)

Q. '40 through——

A. '40 to date. This one was issued in 1955.

Q. The top one? A. Yes.

Mr. Lyon: The catalogs just identified by the witness are offered in evidence as Defendants' Exhibit J.

The Court: Admitted.

(The catalogs referred to were received in evidence and marked as Defendants' Exhibit J).

Mr. Lyon: The record isn't clear whether Exhibit N is in evidence. If it isn't, I would like to offer it at this time.

The Clerk: I show it in.

The Court: There isn't any foundation for it, except your speech.

Mr. Lyon: I think Mr. White took Mr. Muench over this pretty carefully yesterday.

The Court: It that right?

Mr. White: No, your Honor: I don't recall having taken him over it.

The Court: I think you made a statement about it.

Q. (By Mr. Lyon): I show you what has been offered for identification as Defendant's Exhibit N and ask you to tell [138] me what that is and what it illustrates.

A. This is a plaque we made up several years ago to show how we manufacture our Make-a-Rainbow candle. To the left is the wick itself, a 9-ply wick. On that wick we cast a core of about a quarter of an inch in diameter of white candle stock. On

(Testimony of Norbert C. H. Muench.)

that core we paint successive strips of colored wax, which we called yesterday mother color. After that we dip the candle in successive dips to the desired diameter of the candle. This last one shows the candle after the bottom is cut off, in order to give a base.

Q. Is that illustrative of the practice of the Emkay Candle Company or the Muench-Kreuzer Candle Company in making its drip candles, colored drip candles, since September 5, 1952?

A. Yes; and we haven't varied from it.

Q. Is any dye applied directly to the wick in that process?

A. Not since September 5, 1952.

Q. Is the dye which is contained in the candle dissolved in the body of the wax in your Make-a-Rainbow candles as exemplified by that process?

A. As we make it, we dissolve the dye into a stock so as to make a mother color, and from that we paint that onto the core of the candle. We never have used dye straight in any of our candles.

Q. What happens—— [139]

Mr. White: Do we have an answer to counsel's question, is there dye in the body of the candle?

Q. (By Mr. Lyon): Answer it again, will you, please? Is the dye dissolved in the wax of the candle?

A. In the body of the candle wax? No. That is, it is painted on here in this fashion.

Q. It is painted on in wax, though, is it not?

A. In wax, yes.

(Testimony of Norbert C. H. Muench.)

Q. It is dissolved in that wax?

A. It is dissolved in wax and then painted onto the core of the candle.

The Court: And becomes a part of the body?

The Witness: And becomes a part of the candle where it touches.

Q. (By Mr. Lyon): I show you a candle which was handed to me yesterday by Mr. White and said to be a copy of Plaintiff's Exhibit 12, and ask if you don't notice in that candle a rather peculiar condition, and if you will explain it to the court how it got that way.

A. Well, the candle when it ages will have, if there is any dye in it, either on the outside or the inside, will have a tendency — we use the word "bleed" into the body of the wax.

That happens with all dyes, particularly aniline dyes, as the candle ages. And it will be hastened if the candle [140] happens to be kept in a warmer storage place than if it is in a refrigerated storage place.

Q. So that the dye has——

A. The dye has shown through here according to what has been painted below onto the core of the candle.

Q. It has migrated, then?

A. It has migrated.

Q. It is in solution in the body of the wax, is that correct?

A. We use the word bleed.

Mr. Lyon: I will offer the candle just identified

(Testimony of Norbert C. H. Muench.)

by the witness as defendant's exhibit next in order. It will be Q, I guess.

The Clerk: Exhibit Q.

(The candle referred to was received in evidence and marked as Defendant's Exhibit Q.)

The Court: That is a candle manufactured by whom?

The Witness: That candle is manufactured, I believe, by us. Mr. White represented it as such.

The Court: Exhibit N is also admitted.

(The exhibit referred to was received in evidence and marked as Defendant's Exhibit N.)

Q. (By Mr. Lyon): Mr. Muench, I call your attention to Exhibit 13-A, and Exhibit 4-C, and ask you to compare the brightness of the coloring of the wax drippings of those two [141] candles and state, if you can, what that tells you.

A. This candle 4-C is one of Mr. Wilson's candles. Candle 13-A is one of our Deluxe Make-a-Rainbow candles. 4-C is made with the dye on the wick. Our Make-a-Rainbow candle, 13-A, is made with the dye on the core.

In our experiments we found that by placing the dye on the core we got better and brighter colors. And the reason for that is that dyes or colors placed directly against the wick have a tendency, due to the heat of the flame, to oxidize and darken. Consequently, the colors placed on the core will have a tendency to mix with the white candle wax before it oxidizes, and therefore escape the oxidization to the

(Testimony of Norbert C. H. Muench.)

extent that dyes placed directly on the burning wick will do.

Q. When you see a nice bright color like 13-A, what does that tell you as to whether or not any of that dye has been materially associated with the wick?

The Court: Are you selling these candles or trying a lawsuit—"a nice bright color"?

The Witness: It certainly shows that the colors have not been oxidized by the heat of the flame. They have escaped that tendency.

Q. (By Mr. Lyon): Does that tell you, then, that the colors haven't been intimately associated with the wick?

A. It certainly does, because otherwise they would [142] have been darkened up to an extent.

Mr. White: Relative to the appearance of those two candles, I want to call attention to the fact that plaintiff's Exhibit 4-C is not in its normal condition, because unwittingly yesterday the clerk had reached up and tipped it over, and the upper part was altered from the condition that normally we have.

The Court: Well, the colors of the melted wax are about the same today as they were yesterday.

Q. (By Mr. Lyon): Mr. Muench, will you refer in Exhibit A to the patent to Funke.

The Court: By the way, this is a good time for a morning recess, which we will now take.

(Recess taken.) [143]

The Court: You were turning to what patent?

(Testimony of Norbert C. H. Muench.)

Mr. Lyon: We are going to take a slight detour, your Honor.

The Court: Very well.

Q. (By Mr. Lyon): Mr. Muench, in 1953 at my request did you make up some candles generally in accordance with the teachings of the Nelson and the Fredericks patents? A. I did.

The Court: What do you mean, generally in accordance with the teachings?

Mr. Lyon: I will have him describe exactly what he did, your Honor.

The Court: Very well.

Q. (By Mr. Lyon): I hand a candle to you which has been identified by the clerk as Exhibit D-2.

(The exhibit referred to was marked Defendants' Exhibit D-2 for identification.)

Q. (By Mr. Lyon): I will ask you to tell me what that is.

A. I made that up in 1953, I think. I have my notes here.

I made this up on February 2, 1954, tagging it it after I got through with a Nelson tag, and I made that up on the same [143a] basis practically as I described before.

Shall I describe how I made it again?

Q. Please do.

A. I used a 9-ply wick. I soaked successive parts of wick in saturated solutions of the following and in this order:

(Testimony of Norbert C. H. Muench.)

1. At the top, orange red No. 621 made by Sheppard Chemical Company.

2. Copper acetate made by Fisher Scientific Company, Pittsburgh.

3. Brown C-59 made by Sheppard Chemical Company, Cincinnati, Ohio.

And 4. Copper chloride made by Merck & Company of Rahway, New Jersey.

After drying I dipped the wick in a wax mixture containing the same salts for each part and allowed to harden.

I then dipped the prepared wick in candle material to complete the candle.

Now I would like to identify those which I used as some may think it is an aniline color, like orange red 621 is made from cadmium sulfo selenides.

Blue 1 is a cobalt aluminate.

And the brown C-59 is a spinel composed of iron, chrome and magnesium.

Q. What is a spinel? [144]

A. It is a sort of a mixture. It is a technical term which I can't give offhand. It is in that book I have.

Q. Is it a mixture of metals?

A. It is a mixture of metals in a certainway.

Q. Referring to the Nelson patent, page 1, at the bottom of the first column, will you read off some of the various metallic salts that are suggested by Nelson?

A. Beginning with line No. 43 it says:

"To cite a few examples of a great variety of salts

(Testimony of Norbert C. H. Muench.)

which can be used in connection with the present invention, strontium salts, e. c., chloride, nitrate, sulphate, give a scarlet flame; barium salts give a green flame; potassium salts produce a violet flame; copper halides give an azure flame; zinc salts produce a white flame; selenium salts produce a light blue flame; calcium salts produce a brick-red flame; sodium salts produce a bright yellow flame of a more definite and intense yellow than an ordinary flame." [145]

Q. If you took any of those salts which in their natural state are white, they wouldn't color the drippings of a candle, would they?

A. Of course not, not as long as the candle body was white.

However, they might color a red or a brown or a black candle body white on account of the contrast of the salts.

Mr. Lyon: Let the record show that I am lighting Exhibit D-2.

Q. Calling your attention to Exhibit E-2, will you explain what that is?

A. E-2 is a candle I made——

Q. Just a minute. Before you go ahead, Mr. Muench. I offer Exhibit D-2 in evidence.

The Court: Admitted.

(The exhibit referred to was received in evidence and marked as Defendant's Exhibit D-2.)

Q. (By Mr. Lyon): Now go ahead, please, on E-2.

A. Exhibit E-2 is a candle I made under the

(Testimony of Norbert C. H. Muench.)

Fredericks patent on October 19, 1953. I used a 9-ply wick. I dipped the wick into melted petrolatum. I then covered one side of these wicks with salts in the following longitudinal order:

(1) Orange red No. 621, made by Sheppard of Cincinnati; Blue No. 1 made by Sheppard of Cincinnati; copper acetate made by Fisher Scientific Company, Pittsburgh; brown C-59 made [146] by Sheppard of Cincinnati. I then dipped the prepared wicks in melted paraffine to seal in and hold in place the salts on the wick. I then dipped the prepared wicks in candle stock to the desired size.

Those are the same salts as I described on the Nelson patent.

Q. I don't want to argue with you, but how about that blue?

The Court: How about what blue?

Q. (By Mr. Lyon): Blue No. 1. That wasn't in Nelson, was it?

A. Blue No. 1 was made by Sheppard. It is a cobalt aluminate.

The Court: What is Blue No. 1?

The Witness: That is how they identify for——

The Court: Coloring material?

The Witness: Yes.

The Court: I beg your pardon.

Mr. Lyon: That is one of the metallic salts, your Honor, that is in the candle that he just identified.

The Court: Very well.

Mr. Lyon: The candle just identified by the wit-

(Testimony of Norbert C. H. Muench.)

ness is offered in evidence as Defendant's Exhibit E-2.

The Court: Admitted. [147]

(The candle referred to was received in evidence and marked as Defendant's Exhibit E-2.)

Mr. Lyon: With the court's permission, I will light E-2.

Q. Do you care to comment on the state of the drippings on candle D-2 at the present time?

A. It is just beginning to drip, and at this point it has a sort of a pinkish hue to it.

Mr. White: May I inquire as to what flame color Orange Red 621 is supposed to give?

Mr. Lyon: What flame color?

Mr. White: Yes, what flame color.

Mr. Lyon: I don't know.

The Witness: Well, as they work out, Mr. White, they really do not affect the flame very much. But they would give one out that is called for by them, by either patent, for a cadmium with a sulfo selenide mixture. Now, what color it would be, I really don't know.

Mr. White: Isn't it true that neither patent even mentions cadmium?

The Witness: It may be. But they say, "or other salts" in there, as I recall. So they don't limit themselves to what they just mentioned.

Q. (By Mr. Lyon): What you were doing in 1953 in investigation was to try to find the best coloring metallic salts [148] that you could find, is that right?

A. Yes.

(Testimony of Norbert C. H. Muench.)

Mr. White: That is objected to as highly leading. I don't object to him being asked what he did, but I think that is entirely leading.

The Court: It is, but is is answered. If I sustained the objection, he would turn right around and say, "What did you do?" and he would answer it. The harm is done.

Q. (By Mr. Lyon): Will you please now refer in Exhibit A to patent No. 1,701,844, to Funke, which was a file wrapper reference, and explain the disclosures in that patent to the court?

A. Will you ask that question again, please, Mr. Lyon?

Q. Will you refer to the patent to Funke and explain what that teaches?

A. Well, this teaches the idea of having a colored flame,, and also in perfuming and tying it up with the color of the wax of the candle. But it only calls for one color to a candle.

Q. What kind of dye, if any, does it disclose?

A. It calls for such things like potassium nitrate, liquid sulphur, copper sulphate, and strontium nitrate.

Q. How about the candle body, is it colored with any kind of a dye?

A. I think he mentioned in here that they can be a [149] colored candle, and also he mentioned the fact that they perfume the candle, too. He says to obtain a red candle, red aniline dye is added.

Q. That is what I mean. He suggests using aniline dye to color the candle body, is that correct?

(Testimony of Norbert C. H. Muench.)

A. That's right.

Q. May we have your attention again to these candles D-2 and E-2? D-2 has now dripped red, is that correct? A. Yes, sir.

Q. And E-2 has dripped pink, is that correct?

A. Pink. It will blend into a red as it progresses.

Mr. White: For the record, I should still like to know what color that flame is supposed to be in accordance with the teachings of the patents which the exhibits allegedly represent.

The Court: Do you mean what color flame on D-2 and E-2?

Mr. White: These patents state that when they are followed, certain flame colors will be produced.

The Court: What color is D-2?

The Witness: It is quite evident that the carbon has overcome any ability——

The Court: It is a yellow color, isn't it?

The Witness: Yes.

The Court: What color was it supposed to be?

The Witness: I imagine it was supposed to be sort of a [150] reddish color.

The Court: Now, E-2 at this point?

The Witness: The same thing.

The Court: Both of them are yellow?

The Witness: Yes.

Mr. White: In reality, they are ordinary candle flame colors, are they not?

The Witness: That is right.

I have never succeeded to get a real colored flame, I mean where you overcame the yellow flame, and I

(Testimony of Norbert C. H. Muench.)

don't think anybody else has with all of their patents. They have achieved it in part, but not entirely so.

Q. (By Mr. Lyon): Some time ago, prior to making a drip candle, a color-changing drip candle, did you make an investigation as to colored flame candles?

A. Yes, I did. Prior to the second World War I was out in Chicago, and we had a cosmetic house run by a Negro by the name of J. Turner Wall, who ran the O-I-AL Manufacturing Company. He made cosmetics for the Negro trade, making hair dekinkers and things of that kind. We sold them beeswax for their cosmetics. While I was with him he spoke to me of making colored flame candles, which he wanted to incorporate into a religion, whereby we would supply candles that would burn with different colored flames, like red, blue, and green, and he apparently was going to build up a religious sect around that idea.

I experimented, after I got back to Syracuse, with various types, but I never could produce one that would burn with a colored flame, because the yellow, like these show, would always come out and predominate.

Q. You gave me one of those candles, didn't you, that you made at that time? A. Yes.

Q. We burned one in my office the other day?

A. That is right. It burned with a colored flame but had a tendency to drip more with the color of the salts in the wax.

Q. Intermittently it would exhibit periods of

(Testimony of Norbert C. H. Muench.)

colored flame and then revert to normal flame, is that correct? A. That is right.

Q. You noticed the same thing with respect to Exhibits D and E when they were burned here a while ago. As the judge said, they spit at you once in a while with colored flame, is that right?

A. That is right.

Mr. White: How frequently do they spit?

The Court: The record will show that it was not very green.

The Witness: Doesn't one of the patents, I think it is the Fredericks, mention that with magnesium aluminate he gets a sparkle with it. I suppose that is what he means by throwing out sparks.

Mr. Lyon: Cross examine.

Before that, I am not sure whether I offered Exhibits E-2 or not. I think I have. [153]

The Court: It is admitted.

(The exhibit referred to was received in evidence and marked Defendants' Exhibit E-2.)

Cross Examination

Q. (By Mr. White): Mr. Muench, for what reason and under what circumstances did you make these candles which allegedly follow the prior art patents pleaded in you answer?

A. Such as the Nelson and the Fredericks, to see what they would perform under the experiments that we tried them out at.

Q. How did you come to make up those candle samples? Did you do it on your own?

(Testimony of Norbert C. H. Muench.)

A. What do you mean on my own? I made these candles personally.

A. Did anybody tell you to do it?

A. No, I made them from the tests to find out just whether they would burn with colored flames or whether they would drip.

Q. As I recall, as far back at the time of your trip to Chicago and the testings that followed it, you were then aware that you could not produce a candle that would produce a flame color that would overcome the normal yellowness of the candle, is that right?

A. No, when I had my conversation with J. Turner Wall, [154] it was before I had ever heard of anything about—I heard about colored flame candles but I had never had any experience with them. And Mr. Wall approached me on it and asked me whether I could make some candles that would burn with colored flame because——

Q. Yes, you have testified to that.

The Court: When was that, 1953?

The Witness: No, this was prior to the War and possibly around in the late 30s, maybe '37, '38 or '39.

Q. (By Mr. White): As I recall your testimony, you went back to Syracuse and tried it out.

A. Made experiments.

Q. And you were unable to do it, is that not right?

A. I got a certain amount of colored flame but

(Testimony of Norbert C. H. Muench.)

the candle wasn't a suitable one that you could put out and use in commerce.

Q. Now when you had occasion to make up the exhibits which we here see, under just what circumstances did you make those exhibits? Were you told to do so by your attorney?

A. No. He got the patents for me and we talked them over and he wanted to know what I thought of them, and that is when I made the tests that I explained here.

I had made some tests before this and searched around for different dyes, and so forth, different metallic salts. [155]

Q. So far as the candles we see here, as your exhibits made allegedly in accordance with the prior art patents, is it not true that for all purposes of flame coloring you would consider them commercially unsatisfactory?

A. Yes, I would certainly not produce any colored flame candles with the salts as so far produced.

I might add, though——

The Court: In other words, you wouldn't consider any of these as colored flames?

The Witness: As colored flame candles. Some of them make very good colored drip candles.

Q. (By Mr. White): No one else has succeeded to your knowledge in making a satisfactory colored flame candle using any such expedients, isn't that true? A. Yes, so far, commercially.

Q. Now when you undertook to make up can-

(Testimony of Norbert C. H. Muench.)

dles which followed the teachings of these patents you proceeded in a manner to make them perform like the Wilson patent, did you not?

A. Well, I followed to the best of my ability the directions given in these different patents like the Fredericks and the Nelson.

The Court: Do the Nelson and the Fredericks patents call for a 9-ply wick? [156]

The Witness: No.

The Court: Do they call for any different size wick?

The Witness: No. No patent so far as I know calls for the size of the wick, and that includes the Wilson patent too.

The Court: If D-2 and E-2 and D and E had been made with a bigger wick so that they would drip—I do not mean in the absolute sense of the word, but in the sense that you have described in your testimony that with a larger wick they do not drip—if they had been made with a bigger wick then would they have had colored flame?

The Witness: No. But let me answer that——

The Court: Did you try it? [157]

The Witness: Oh, yes. I have used different sized wicks, but I will say this, that for the metallic salts you could use a larger wick than you can with aniline colors because aniline colors are consumed in the flame, whereas the metallic salts in the great amount have a tendency to be unconsumable in the flame.

They plug up the pores of the wick and there-

(Testimony of Norbert C. H. Muench.)

fore cause the wax not to draw up and be consumed into the flame but to go sideways, whereas the aniline colors have a tendency to be consumed and burned entirely in the flame of the wick.

The Court: And the salts, it is a combination of the material used for coloring as well as having a small wick that makes it a drip candle?

The Witness: That is correct.

Q. (By Mr. White): Mr. Muench, as of the date of the prior art patents to which you have been referring, is this not a more normal size wick that you use in your Emkay candles——

The Court: This is what?

Q. (By Mr. White): In Plaintiff's Exhibit 14, than what we see in your sample of drip candles that you made up?

A. The wick we used in that box of candles is a 30-ply wick.

Q. And that is as of the time of the Nelson, Fredericks, and Funke and the rest of the patents —I am referring to [158] Plaintiff's Exhibit No. 14—this was a more normal wick than the 9-ply wick that you put into these candles?

A. For a candle of the regular commercial size. That is not a novelty candle.

Incidentally, we have—if I may add—we use all sizes of wicks. We have used 9-ply wicks up to 45 and 51-ply.

We also use a square wick that is used in beeswax candles.

We also use a lead wire wick for votive lights

(Testimony of Norbert C. H. Muench.)

and sanctuary candles, and I believe that is the wick that Mr. Wilson uses in his drip candle. That we primarily use and was developed more for votive lights and sanctuary candles.

The Court: What is that?

The Witness: That is a candle burned in the Catholic Church in votive stands for a prayer offering.

Q. (By Mr. White): I recall your statement as being that you followed the teachings of these prior art patents, is that right?

A. To the best of my ability.

Q. Mr. Muench, can you point out to me in any one of those patents the expression "drip candle"?

A. It is not disclosed in either one.

Q. In any of them as a matter of fact?

A. No, I didn't come across that in any of them.

The Court: By the way, is it all right to extinguish these candles now?

Mr. Lyon: Yes, it is.

Q. (By Mr. White): Now, it is true that the drip-ability or the profuse dripping characteristics of the candle is one of its most outstanding and demanding requirements, is that not true?

A. Which candle are you speaking of?

Q. I am speaking of the type of candle disclosed, or as we see it in the defendant's and plaintiff's commercial candles.

The Court: Defendant's and plaintiff's commercial? You mean defendant's Rainbow candles?

(Testimony of Norbert C. H. Muench.)

Mr. White: That is right.

The Court: And the plaintiff's Magi-Color candles?

Mr. White: That is correct, your Honor.

The Witness: So that I understand it, will you state that again, Mr. White, please?

Q. (By Mr. White): One of their essential and outstanding requirements is that they be drip candles, is that not right?

A. Yes, that is the purpose of the candle.

Q. Without being drip candles they would not perform as they are intended to perform, is that not right? [160] A. That is right.

I don't know whether I answered that according to the wick, but you mentioned the size of the wick there. Did I miss that?

Q. No, I hadn't intended it that way. I will come to that.

A. Because it is really the size of the wick that, barring a draft, makes them drip.

Q. I will come to that.

The Court: What he is getting at is the purpose of manufacturing, the reason for your Rainbow and the sellings of your Rainbow candles, and the sales appeal of it, is the fact that it drips different colors.

The Witness: That is right.

Mr. White: Because it has the capacity to drip and from drippings into which the colors may be incorporated.

The Court: Yes.

(Testimony of Norbert C. H. Muench.)

Mr. White: We take one step at a time.

The Court: But it would be a drip candle.

The Witness: Yes.

Q. (By Mr. White): Now, do you find in any of these prior art patents any express intention whatsoever of making a drip candle?

A. I came across no word that says for dripping purposes. [161]

Q. Did you see in them any language that would lead you to believe that as they would be manufactured they would be drip candles?

A. Yes, because the salts would plug up the wicks and cause them to drip. In fact, it would be pretty hard to make a non-drip candle, even barring a draft, with these salts, because they are not consumable in the wick, and therefore they plug up the wick and cause the wax to run over the sides.

Q. So, therefore, you would say that these patents were suggestive of using small wicks and not large wicks?

A. Well, no, I didn't say that. I said that even if you used a much larger wick, say a 30-ply wick, and you got plenty of salts in there, you would have a dripping candle.

To give you an example of that that we have, prussian blue was made of iron salts. It is a beautiful blue, and it is a permanent blue, much better than aniline blues ever were and ever will be, in my opinion. Now, we have tried to use, and we do in some circumstances use prussion blue, but we avoid it on a solid colored candle, and we avoid

(Testimony of Norbert C. H. Muench.)

it when the candle doesn't have to stand up too long in shade, because prussian blue made of iron salts has a tendency to get into the pores of the wick, plug them up, and cause the candle to drip.

Q. Do you happen to recall Mr. Funke's statement, which I believe is the only reference in all you prior art [162] patents, to wicks that would be used with this type of candle, the type of candle in which the flame is to be colored.

The Court: I think you have two or three questions and an argument in that question, and if he answered it I wouldn't know what it meant. Your question is: Does he recall what statement in Funke?

Q. (By Mr. White): First, is it not true that Funke is the only patent among these listed in your answer that refers to wicks or wick sizes to be used in candles of this flame colored type?

The Court: That refers to wicks, or to wick sizes, which is your question?

Mr. White: To wick sizes, your Honor.

The Court: To wick sizes?

Mr. White: Yes.

The Witness: I don't recall where he mentioned wick sizes at all. I wish you would point it out to me.

Q. (By Mr. White): Referring to the Funke patent, column 1, lines 32 through 44:

"The several chemicals that will give the candle flame the desired color will be mixed with the inorganic wax in the proportions (paraffine 75 per cent and stearic acid 25 per cent) or they may be

(Testimony of Norbert C. H. Muench.)

incorporated in a specially prepared wick woven from long staple cotton to hold the chemicals [163] contained in solution in which the wick will be immersed, and then dried, the wick being larger than the usual wick to permit it to absorb enough of the solution containing the flame coloring chemicals to properly color the flame."

A. He doesn't mention any particular size. He just uses the word "larger." I wouldn't know how much larger he would mean by that. Possibly just as much as he could get. If he went too far, he would get a torch, instead of a candle.

Q. You certainly wouldn't, in following Funke's teachings, use a 9-ply, wick would you? Is a 9-ply larger than the usual wick?

A. A 9-ply is smaller than the wick that we use in the standard candle.

The Court: What do you use in the standard candle?

The Witness: That particular candle in the gold box, we use a 30-ply. But we also use 24-ply in certain types.

The Court: Does the number of the ply——

The Witness: It means a larger wick.

The Court: The smaller the number, the bigger——

The Witness: The smaller the wick.

A wick can be compared to a pipe that drains out a tank. If the pipe is larger, of course it sucks out the water faster. The same way with a larger

(Testimony of Norbert C. H. Muench.)

wick, it will suck up the wax by capillary action into the flame and burn it faster.

The reason we use a 9-ply wick here, you [164] could use also a 12-ply and a 15-ply and get just as good a burning candle, is that in places where there wouldn't be any draft you would get a quicker drip. We use a 9-ply wick regularly, but here with this draft here, you could have used a 21-ply and you would have gotten a drip, to.

The Court: I see.

Mr. Lyon: Mr. Muench, I hand you a 21-ply candle, which you manufactured in 1953, I believe, and gave to me, in accordance with the teachings of the Fredericks patent; isn't that correct?

The Witness: That is right.

Mr. Lyon: In the afternoon we will burn that.

The Court: Recess to 2:00 o'clock.

(Whereupon, at 12:00 o'clock noon, a recess was taken to 2:00 o'clock, p. m.) [165]

NORBERT C. H. MUENCH

The Court: Any ex parte matters?

The Clerk: No, your Honor.

The Court: Proceed.

The Clerk: No. 15273-PH, Lester F. Wilson v. Muench Kreuzer Candle Company.

Your Honor, for the record, the defendant has marked for identification Exhibit H-1 and E-3 for identification only, two candles.

Mr. Lyon: Your Honor, those candles will be burned.

(Testimony of Norbert C. H. Muench.)

The Court. H-1 is whose candle?

The Clerk: It is a Muench Kreuzer candle.

The Court: That is a defendant's candle?

Mr. Lyon: It is a candle, H-1 is a candle made by Mr. Muench in 1952 or '53, following the teachings of the Housamann patent, and it has a 21-ply wick.

Exhibit E-3 is a candle made by about the same time by Mr. Muench following the teachings of the Fredericks patent, also having a 21-ply wick.

And in that case the salts used were copper acetate, copper chloride and strontium chloride.

The Court: They are marked for identification.

The Clerk: Yes, your Honor. [166]

(The exhibits referred to were marked Defendants' Exhibits H-1 and E-3 respectively for identification.)

The Court: Proceed:

Mr. White: Let the record show that we take exception to the gratuitous observation that these were made in accordance with the teachings of the patents.

The Court: The record will show that that is Mr. Lyon's contention.

Cross Examination—(Continued)

Q. (By Mr. White): Mr. Muench, in your testimony concerning Defendants' Exhibit D purportedly following the Nelson patent, I believe you stated that the candle is made using a 9-ply wick coated successively with copper acetate, iron salts,

(Testimony of Norbert C. H. Muench.)

copper chloride and cadmium sulphide, am I correct?

A. Yes, sir.

Q. Where in the Nelson patent do you find reference to copper acetate?

A. It doesn't mention copper acetate; it does mention copper chloride.

Q. It does not mention copper acetate.

A. No.

Q. Mr. Muench, is copper acetate and copper chloride the same thing?

A. Well, they both come from copper. [167]

Q. Are they the same thing?

A. I imagine one is treated differently than the other, Mr. White.

Q. Are they the same thing, the same materials?

A. Well, I can't answer that on the basis that I don't know enough about copper acetate and copper chloride to go into the ramifications of it. But I take it that they are both metallic salts.

Q. But the patent, you say, refers to copper chloride? A. Yes, sir.

Q. Apparently you knew enough about copper acetate to use it instead of copper chloride. Why?

A. Well, copper acetate is a metallic salt that we have used for years, in fact, I remember making it way back in my early days, using copper acetate and stearic acid to make a dye to use in candles, and we have used it for years.

Q. Have you ever used it in your Make-a-Rainbow candle?

A. Oh, yes, we have used it.

(Testimony of Norbert C. H. Muench.)

Q. During what period?

A. In the early periods that we used it?

Q. When.

A. I would say at the beginning when we used it, in 1948, we experimented and I think we used it in '49.

Q. Did it go into the commercially sold candles?

A. At that time I believe it did. [168]

Q. Are you sure?

A. I am quite sure. I can't say definitely but we did use it in those days at some times. At the present time we don't use it for the reason that it has a tendency to color up the others and we have been using the aniline dyes instead of the copper acetate in them. [169]

Q. Analine dyes are wax soluole dyes, are they not? A. That's right.

Q. Now, the second material, iron salts; what iron salts?

A. Well, I suppose they all have different names. This one, if you want to pin this down to a certain angle, I can give it to you. I can't even pronounce it. It is spelled—this iron salt that we use from du Pont is spelled d-i-c-h-l-o-p-e-n-t-a-d-i-e-n-y-l-i-r-o-n.

Q. May we call it "dichloro" for short, the dichloro iron compound; is it a salt?

A. I would say so.

Q. Do you know whether it is?

A. I am not a chemist, so I can't tell you definitely. It was sold to us as a salt.

Q. You referred to it in your answer as being

(Testimony of Norbert C. H. Muench.)

an iron salt, did you not?

A. Yes, I did, because I was told so.

Q. Do you find reference to that compound in the Nelson patent?

A. No, I don't. Not by that name, anyway.

Q. Why did you use it instead of something mentioned in the Nelson patent?

A. Because these various salts that I got were available to me, they were metallic salts, and I believe both the [170] Nelson and Fredericks patents do not limit it to what they mention in there. They say, "and other salts," or words to that effect.

Q. Do you find any reference in the Nelson patent, even, to iron salts? A. I don't know.

Q. Did you not undertake to find out before you presented to the court that an exhibit is made in accordance with the patent?

A. Yes, I did, to the best of my ability anyway.

Q. Do you find reference to iron salts in the Nelson patent? A. I don't recall.

Mr. Lyon: We will stipulate that there is no reference to iron salts in the Nelson patent. It is mentioned in the Fredericks patent, however.

Mr. White: I suggest that we allow the witness to testify. I am concerned only with the Nelson patent for the time being.

The Court: All right.

Q. (By Mr. White): The fourth compound used in Exhibit D is cadmium sulphide; do you find any reference in Nelson to cadmium sulphide?

A. No, I don't.

(Testimony of Norbert C. H. Muench.)

Q. Why did you use it? [171]

A. Because it was a mineral salt.

Q. You testified that you are not a chemist; how did you happen to select that?

A. Well, possibly because it was available. So many of these salts I wasn't able to get in Syracuse, so I took what was available, being mineral salts.

Q. Let me refer you to a few compounds mentioned in the Nelson patent. Strontium salts, you can get plenty of those, can't you?

A. I suppose so. I got one of them here.

Q. Barium salts, can't you get those from Merck or any chemical supply house?

A. Some of those. Of course, I did not try to get salts that were white, because I realized that many of the strontiums are white salts. It is obvious, unless you use a colored wax, they are not going to show up.

Q. In other words, you were attempting to——

A. Color the wax.

Q. You were attempting to produce the Wilson patent instead of Nelson, is that not right?

A. No. I was trying to go by the patents themselves. I may have not limited myself exactly to the few that Nelson mentions here.

Q. You refer, Mr. Muench, to a few. Let me read you this: "Strontium salts, e.g., chloride, nitrate, sulphate, [172] barium salts, copper halides, zinc salts, selenium salts, calcium salts, sodium

(Testimony of Norbert C. H. Muench.)

salts." Certainly there is plenty of table salt around?

A. That is true. I went over a listing, and I believe in my reply to your questions I gave a listing of salts that had colored—that were colored. Those undoubtedly would color. And I think some of them come within that scope there. But at the time I wasn't able to get any of them in Syracuse.

Q. Mr. Muench, isn't this a fact, you examined the compounds mentioned in this patent and you found reference to some copper halides — copper chloride, and you found that that gives some coloring to wax, but as far as the rest of these compounds are concerned, you couldn't find it in the Nelson patent, so you had to go outside some place and pick up some copper acetate, some dichloro, whatever it is, and cadmium sulphide, isn't that right, you couldn't find it here?

A. We primarily looked for salts that were covered, because we realized if we were limited to salts that were white in color they certainly wouldn't color white wax.

Q. Did you in selecting your compounds that you got outside, did you select them to color the flame?

A. Some of them I did according to this. Now, we did take some of these salts here, and I think this book over here that gives some of the cadmiums, like is it cadmium reds and [173] things like that—I don't know whether it would color the flame, but it would certainly color the wax.

(Testimony of Norbert C. H. Muench.)

Q. But if you are undertaking to reproduce Nelson, you would certainly inquire into whether it colored the flame, would you not?

A. You, yourself, said before that what we made up here, like with these salts, didn't color the flame. So I don't know whether it will or not.

Q. That, I think, is beside the point. But to get down to a concrete question, you selected cadmium sulphide; what color does cadmium color a flame?

A. It seems to me that cadmium would color red, wouldn't it? I am not too sure about that, but I understood that cadmium is used in the fireworks industry where they use it for coloring fireworks in the air. [174]

Q. Do you mean that you prepared that exhibit purportedly in accordance with Nelson without knowing what color the compound or any part of it is supposed to color the flame according to Nelson?

A. In some case, I would say yes, I wasn't particularly interested in coloring the flame in that particular sense. But the strontium that is mentioned here was supposed to color flames.

Q. Would you disagree with me, Mr. Muench, if I asserted that cadimum will not color a flame?

A. I wouldn't know.

Q. I will represent that cadmium won't color the flame and the defendant may check the chemical art or the chemical literature, textbooks, to contradict me if he cares to.

(Testimony of Norbert C. H. Muench.)

Now we come to your Exhibit D-1, which I believe you stated—

A. Which exhibit was that?

Q. D-1, Mr. Muench. That is a second candle purportedly made in accordance with Nelson.

In that I believe you testified that you used orange red 621, and that is supposed to be cadmium sulpha selenide. Do you find any reference to such a compound in Nelson? A. No, I don't.

Q. Next you named copper acetate. Do you find copper [175] acetate in Nelson?

A. As I said before, no.

Q. Next you referred to brown C-59, which is supposed to be a spinel of iron, chrome and magnesium. You find any reference in Nelson to any kind of a spinel? A. Here is selenium salts.

Q. Is spinel a salt?

A. I imagine the spinel is a mixture of salts.

Q. Do you know what a spinel is?

A. I have a book over there that gives a definition of it.

Q. But before preparing your exhibit and to be able to describe it, did you not find out exactly what a spinel is of those metals?

A. Well, I read the definition but, frankly, I have forgotten just what it said in there.

Q. The fourth compound was copper chloride.

A. Yes.

Q. So in this instance we find only one out of four compounds named in Nelson, namely copper chloride, that being a halide of copper, is that correct?

(Testimony of Norbert C. H. Muench.)

The Court: A what?

Mr. White: A halide. A halide chemical is a compound.

The Court: How do you spell it?

Mr. White: H-a-l-i-d-e. [176]

The Court: All right.

Q. (By Mr. White): Is that right? It is a class of compounds. Nelson did not mention, as I recall, copper chloride, but I will give the defendant the benefit of the doubt because copper chloride is a copper halide.

So am I not correct in stating that in the preparation of Exhibit D-2 you used only one compound, one out of the four mentioned by Nelson?

A. There is selenium used here and the orange red 621.

Q. Is cadmium sulpha selenide mentioned?

A. No, not the combination.

Q. Did you know whether or not any other selenium salts would give you a color such as you sought to gain in orange red 621?

A. Well, if the salts were colored, it would color it.

Q. Do you know whether any other selenium salts would give you a similar color?

A. If I had my book over there I could look up the colors of the salts and I could tell you that.

Q. But you don't know without looking it up?

A. I don't know offhand, no.

Q. Now what color would selenium color a flame? A. I believe it would color red.

(Testimony of Norbert C. H. Muench.)

Q. Are you sure? [177] A. No.

Q. What color would a spinel of iron, chrome and magnesium color a flame?

A. I would say that the magnesium would be whiteish but the iron would be reddish.

Q. What does a spinel, all three of them, how would that color the flame?

A. Well, it would be a combination.

Q. Do you know?

A. No, I don't, because I am not a chemist.

Q. Now we have left two compounds, copper acetate and copper chloride, which you used.

Now if we rely on those to color the flame we are going to get one color from the two compounds, aren't we, according to Nelson?

A. According to our tests the copper acetate colored a greenish sort of a flame and the copper chloride has a tendency to color a bluish flame.

Q. Does not Mr. Nelson say that it is the copper which determines what the flame color shall be?

A. Well, possibly so, but then why do you object to copper acetate?

Q. I am not objecting to copper acetate for any reason other than its use contrary to the representations made concerning any conformance of exhibits containing the references [178] or prior art patents which do not contain it.

Is this not true, Mr. Muench, that so far as flame coloring is concerned it is the metal, copper, whether it be in the form of a chloride, the sulphate or nitrate or acetate or what have you?

(Testimony of Norbert C. H. Muench.)

A. I would think so, yes. It would give a basic —you mean it would give a basic background?

Q. That is right.

So if we were making this two-copper compound candle for the purposes of the Nelson patent we would be producing in two sections of the candles the same color, wouldn't we?

A. With a different shading of course.

Q. Mr. Muench, in undertaking to reproduce the Nelson patent as per your Exhibits D and D-2, why didn't you follow the examples given in the patent?

I want to read those examples (column 2, starting at line 84):

"Paraffine wax or a mixture of paraffine wax with a small percentage of stearic acid or beeswax is melted and 1 per cent, more or less, of finely ground strontium nitrate may be added thereto. The wick of the candle may be immersed in a saturated solution of strontium nitrate and properly dried. The candle is then prepared by the usual manner of manufacture, e.g. placing the wick [179] in position and pouring the molten material into the mold or any other improved method of manufacture."

Will a candle so made have any effect on the coloring of its wax whether that candle drips or doesn't drip?

A. I believe strontium chloride is a white wax. If the body of the candle——

Q. Just a moment. Will you please answer that yes or no. And the compound is not strontium chloride, it is strontium nitrate.

(Testimony of Norbert C. H. Muench.)

A. No, it would not color.

Q. Going to the second example:

"If it is desired to make a candle which will burn with a vari-colored flame, the candle may be built up in sections with mixtures containing salts which give vari-colored flames, e.g. one-third of the candle may be made up with strontium salts, the second third with zinc salts, and the last third with a mixture of copper chloride and potassium salts. The candle itself may be of any desired color, e.g., the top third may be red, the intermediate third white, and the bottom third blue; the flames will correspond substantially to the colors of the sections, namely, red, white and blue." [180]

Why didn't you give us a representation of the Nelson patent according to that example?

A. Well, I took salts that were naturally colored. Now there are some strontium salts that carry a color but I was unable to get those salts.

Q. There are strontium salts available at any chemical supply house, aren't there?

A. I tried in Syracuse but I was unable to get them.

Q. What about zinc salts, could you get no zinc salts?

A. I didn't get any.

Q. But you managed to get copper salts?

A. We had copper salts. We have always used copper salts.

Q. Did you try very hard to get some of these other salts?

The Court: What is "very hard"?

(Testimony of Norbert C. H. Muench.)

Q. (By Mr. White): Did you inquire at any of the chemical supply houses in New York City?

A. In Syracuse, we tried.

Q. How far are you from New York City?

A. About 300 miles.

Q. And in New York City one can find just about any chemical that is on the American market, isn't that true?

A. That possibly is, yes, but they run in various combinations [181] and you seem to object to combinations like I have mentioned.

Q. Now let us refer to your Exhibits E and E-2, purportedly made according to the Fredericks patent.

I believe you testified that Exhibit E contains in succession copper acetate, iron salts, copper chloride, cadmium sulphide.

What iron salts did you use?

A. That is the one made by Du Pont with the long name.

Q. Did you find a reference to it in the Fredericks patent?

A. Not by that long name, no, but I think he does mention iron salts, doesn't he?

Q. Aren't there a great many iron salts?

A. Yes, there are.

Q. Did you try any other iron salts?

A. Yes, we tried some other iron salts, that one that we used here in the spinel.

Q. But alone, did you try and find any other

(Testimony of Norbert C. H. Muench.)

iron salts alone that would work satisfactorily in drip candles to color the wax?

A. No, not salts as such. We tried a number of different salts originally, in fact, I even tried pieces of metal, rusted metal in there, which certainly colored the wax. [182]

Q. Would you use them in the manufacture of a multi-colored drip candle?

A. Not for commercial purposes.

Q. In the Fredericks patent do you find reference to cadmium sulphide, or any cadmium compound?

A. No. There is copper and calcium mentioned, and serium.

Q. There are other things, but you don't find the cadmium compound?

A. It is not mentioned here, no.

Q. And you did not check cadmium sulphide with respect to its effect upon flame coloring; is that not right? A. That's right.

Q. And you did not check the iron salts that you use with respect to flame coloring, is that right?

A. I checked the iron salts. They had the tendency, but not much, of giving a sort of reddish hue to it.

Q. Therefore, they would be of no practical good for coloring the flame, is that right?

A. That's right, not for commercial purposes.

Q. Fredericks refers to water soluble salts, doesn't he?

A. I believe it does in certain cases.

(Testimony of Norbert C. H. Muench.)

Q. Are the iron salts that you use water soluble?

A. Not to any extent. [183]

Q. Is cadmium sulphide water soluble?

A. I don't think so.

Q. Continuing now on your Exhibit E-2, which I believe you testified was made to contain successively Orange Red 621, Blue No. 1, being a cobalt aluminate, (3) copper acetate, and (4) Brown C-59. Which of those four chemical compounds do you find mentioned in the Fredericks patent? Any of them? A. There is copper mentioned.

Q. Any cadmium sulfo-selenide?

A. This blue has aluminum, and this calls it aluminate. This calls for aluminum.

Q. I understand Blue No. 1 to be cobalt aluminate. Do you find it in the Fredericks patent?

A. Cobalt—I don't find cobalt mentioned, but I do find aluminum mentioned.

Q. Do you find any combination—will aluminum color the wax?

A. No. But undoubtedly in combination with a cobalt it does.

Q. Therefore, cobalt aluminate means something different from aluminum, doesn't it?

A. Well, it is a mixture, yes, but it still has aluminum in it, as I understand it.

Q. But you don't find anything in Fredericks that [184] corresponds to cobalt aluminate, isn't that true?

A. No, but does Fredericks just limit himself to——

Q. Just a moment. I am asking the questions

(Testimony of Norbert C. H. Muench.)

for the time being. A. Okay.

Q. The answer to that is "No," am I not right?

A. Yes, cobalt is not mentioned.

Q. Now, if you will refer to the Fredericks patent, itself, you will find that Mr. Fredericks took particular pains to tell how his candle may be made in accordance with three examples. Do you recall, Mr. Muench, that he described what he called the single color type, then the alternate color type, and then the mixed color or multicolor type, on page 2, the first column? A. Yes.

Q. I want to read Mr. Fredericks' description of the single color type, starting at line 6:

"If a candle burning with a red colored flame is desired, a wick similar to those now in use, or any suitable wicking, is first dipped into hot paraffine or other wax. Over this waxed wick is applied a continuous film or layer or other deposit of warm petrolatum by drawing the waxed wick through the petrolatum. The wick so prepared is now dipped in crystals of strontium chloride, so that a continuous attachment of the strontium chloride salt is made on one side of [185] of the wick, and in medium propositions for the full length of the wick."

I don't believe I need to encumber the record by reading the rest of it. He merely refers to building up the candle then.

Would a candle so made, whether or not it dripped, color the wax?

A. Whether or not it drips, will it color the wax?

Q. Right.

(Testimony of Norbert C. H. Muench.)

A. Do you mean only made with that particular salt?

Q. I mean a candle made according to the example that I just read.

A. With trontium chloride?

Q. Right.

A. No, it won't color it, because strontium chloride is white.

Q. Continuing with the alternate color type, starting at line 30:

"If a candle burning with alternate blue, followed by red, followed by yellow colors is desired, apply glycerol to the wick on one side for the length of the distance to which it is desired to burn the blue and red colored flames. Now dip the wick into cupric chloride crystals for the distance determined for the blue colored flame, and then dip the wick into the strontium chloride crystals onto that part of the [186] wick reserved for the red colored flame. Now dip the entire wick into melted paraffine, and so forth, so as to seal these salts, and the vehicle onto the wick. Now draw the paraffined remainder of the wick which has been reserved for the yellow color through a saturated glycerol and sodium chloride salt mixture, and dip the part of the wick on which has been applied the yellow burning metallic salt, into the paraffine, so as to seal in this last application. Now proceed to manufacture the candles in the regular manner, being careful that the last coating of paraffine has set sufficiently for safe handling of the wick."

(Testimony of Norbert C. H. Muench.)

Will that candle so made drip appreciably, even according to anything said by Fredericks?

A. Will it drip appreciably?

Q. Could you say for certain that it would drip any more than your regular standard candle, which as I understand it is an ordinary candle not specially designed for dripping, which corresponds to Plaintiff's Exhibit 14?

A. I would say it would, on accoount of the metallic salts that it contains, which would plug up the wick and cause it to drip.

Q. Sometimes these metallic salts snuff out the flame, don't they, as the candle is burning?

A. The reason being that if it is applied all the way around, yes. [187]

Q. Could you explain to me why it was necessary for Mr. Lyon to come up and re-ignite one of your candles this morning?

A. Because there was a decided draft here, and it hadn't had a chance to get started.

Q. Did you notice that the candle right alongside of it was burning?

A. Yes. But even so, a candle within a foot may go out. It is just like individuals, one person may do one thing and one person may do another. I have had candles that will burn within a foot of each other be differently affected by a draft.

Q. The fact of the matter is, is it not, Mr. Muench, that if you are going to try to incorporate on a wick enough of such a light-colored material as copper chloride, you are going to have to apply

(Testimony of Norbert C. H. Muench.)

a lot of it in relation to the quantity of dye that you would have to use; is that not right?

A. That's right. But you could also use a larger wick, too, to compensate for that.

Q. And if you used a larger wick you would be following the teachings of the prior art here, which is the only reference, namely, Funke, that refers to wicks; is that not right?

A. I don't quite understand that.

Q. Did not Mr. Funke say that one should use a wick [188] larger than ordinary, the part we read this morning?

A. He referred to what you might call a puffed up wick. It may not be a fully braided wick. It might be a loose cotton wick to absorb those metallic salts.

Q. He wanted enough wick area to carry his salts, didn't he?

A. Yes. But he didn't limit himself to a braided wick in that case. He may have used what is many times used with bayberry candles, just a heavy cotton strand like, a good deal like this knitting wool is in appearance. It has a great absorption ability.

Q. Would it not be at least as logical to use for any representation of Fredericks a wick of that sort, instead of a No. 9?

A. Certainly, because there is no limit to it, any more than there is in the Wilson patent. You could use a large wick in a Wilson candle, too.

Q. But the smaller wicks make the candle drip more profusely? A. That is right.

(Testimony of Norbert C. H. Muench.)

Q. Referring back to this No. 2 example of Fredericks, to remind you, he referred to cupric chloride, strontium chloride, and sodium chloride. Now, let's assume that that candle would form drippings, how many colors would it drip?

A. Well, at least one with the cupric chloride.

Q. As a matter of fact, that is all it would drip, wouldn't it?

A. Strontium chloride, I believe, is a white salt.

Q. It is a very white salt, and we can produce a sample if there is any question about.

A. Is white a color? If so, if it was with red wax it would drip white, wouldn't it?

Q. But does the patent say it is dripping onto red wax?

A. Isn't it mentioned some place there where the wax may be colored?

Q. He refers to the use of different colored waxes, does he not?

A. I believe he does. In that case, white on red would show as a color, wouldn't it?

Q. Show what color? A. White.

Q. Do you mean that strontium chloride would act like a dye?

A. Well, if it showed up white against red, it would certainly act as a dye, because it would show the color white.

Q. Did you ever try to do that?

A. No, I didn't. But I know if you spilled something white on a red or black background it certainly shows up in [190] contrast.

(Testimony of Norbert C. H. Muench.)

Q. Why didn't you favor us with a candle made according to that example, because there is at least a candle intended to have three different colored flames in its burning?

A. I preferred to show it in the multicolored type as more bearing on the Wilson patent.

Q. As a matter of fact, that example No. 2 wouldn't make a multicolor drip candle?

A. It would show in part, yes.

Q. Would it effectively show the cupric chloride? A. Yes, I believe it would.

Q. Do you know?

A. Well, I have made samples here that showed it. And I have cupric chloride crystals that show a bluish color. It would be most logical to believe that it would show bluish against a white background, or even against some other colored background that contrasted.

Q. Isn't it true, Mr. Muench, you found in order to make a candle that would produce different colored drippings, you found it necessary to depart from Fredericks and go to Orange Red 621, Blue No. 1, cobalt aluminate, and this Brown C-59?

A. Well, doesn't——

Q. Isn't it true, Mr. Muench, that you found it necessary [191] to do that?

A. Well, I took what would naturally have a colored crystal, rather than a white, which seems to me to be logical.

Q. You found it necessary, did you not, to de-

(Testimony of Norbert C. H. Muench.)

part from Fredericks in order to be able to produce such a candle?

A. Doesn't Fredericks say "or any other materials"?

Q. Would you kindly give me a yes or no answer?

A. I would say no, because he doesn't limit himself to these particular ones. He says——

The Court: Excuse me, counsel. May we have the afternoon recess? I have a phone call to take care of.

Mr. White: Yes.

(Recess taken.) [192]

The Court: Proceed.

Direct Examination—(Continued)

Q. (By Mr. White): Mr. Muench, we have referred to examples 1 and 2, being the single color type and alternate color type on page 2 of Fredericks' patent. Now continuing to the third or mixed color type, starting at line 52, Mr. Fredericks said:

"The mixed color, or multi-color type: A red, white and blue colored flame candle can be made in the following manner: Draw the wick through warm petrolatum for the entire length of the wick, and then drip the wick into cuperic chloride crystals so as to have a continuous attachments of the crystals to one side of the wick in medium amount for the entire length of the wick. Now dip the entire wick carefully into melted paraffine which is not too hot, so as to seal in and onto the wick the blue

(Testimony of Norbert C. H. Muench.)

color producing metallic salt. While still warm, the wick is again drawn through warm petrolatum, and it is now dipped into strontium chloride crystals, so as to have a continuous attachment on one side of the wick, in medium amount, for the entire length of the wick, and on top of the blue color producing metallic salt. The entire wick is again dipped into melted paraffine to seal in this [103] last application of the red color producing metallic salt. The wick is then allowed to cool and set, or with care, one can immediately proceed to manufacture the candles in the regular manner."

Mr. Fredericks has not described that mixed color candle in the first place as a drip candle, has he?

A. As a drip, no.

Q: Now if it were a drip candle, how many colors would it drip?

A. Well, it would drip a bluish color with the cuperic chloride, the strontium chloride would drip white and—there isn't any third color mentioned there, is there?

The Court: Red, white and blue, it says.

The Witness: He might have used copper oxide, couldn't he?

Q. (By Mr. White): Did he say that he used copper oxide?

A. No, but he mentions that in the other part.

Q. Will you please confine your answers to my questions?

The Court: What is strontium chloride, is that white?

(Testimony of Norbert C. H. Muench.)

The Witness: That is white crystals.

He mentions a multi-drip mixed color and he only mentions two salts, there, doesn't he, Mr. White?

Mr. White: I believe you are right, Mr. Muench.

Q. Now he deposited the strontium chloride crystals on [194] top of the length of the wick to which he had applied the cuperic chloride, is that not right? A. That is the way it reads.

Q. Strontium chloride wouldn't affect the coloring produced by the cuperic chloride at all, would it?

A. I don't think so. It might be the other way around.

Q. So therefore we would have only a single color?

A. Judging that only two of them are mentioned and one is white.

Q. Referring to your exhibit I, I-1 and I-2, the British Field patent, I believe you testified, Mr. Muench, that such a candle even if it were a drip candle could not burn in any manner productive of successively formed different colored drippings, is that not right?

A. That is right. They would have a tendency to blend along the length of the handle.

Q. And the British Field patent says nothing about making any drip candles, is that right?

A. That is right. [195]

Q. We are in agreement that your Exhibit O, the rope candle, is not a multicolored drip candle?

(Testimony of Norbert C. H. Muench.)

A. Which candle was that?

Q. Your rope candle.

A. The 117 rope, no; that is a single core candle, single color.

Q. And the Star Pillar candle, Exhibit P, is not a multicolored drip candle?

Mr. Lyon: Do you mean Exhibit F?

Mr. White: Is it Exhibit F?

Mr. Lyon: Right.

Mr. White: I am sorry. Stand corrected on that.

The Witness: That is a single core, color candle.

The Court: What gauge is the wick in that one?

The Witness: That is about a 30-ply wick. The diameter of the candle is much larger.

The Court: Would that drip?

The Witness: That would drip, just like this (indicating). In fact, it would drip easier than this one, because of the star shape.

Mr. Lyon: I think we had better light it.

Q. (By Mr. White): You are referring now to Defendant's Exhibit H, a candle assertedly made according to the Hausamann patent.

The Court: He has just lighted Exhibit F. Mr. Lyon did. [196]

(The last question was read by the reporter.)

The Court: You are referring to what?

Mr. White: May I rephrase that?

The Court: Yes.

Mr. White: In reference now to Defendant's Exhibit H, a candle purportedly made according to the German Hausamann patent, as I recall your testi-

(Testimony of Norbert C. H. Muench.)

mony this is a candle made, using a 9-ply wick?

The Witness: Yes.

Q. (By Mr. White): Is there anything said in the Hausamann patent as to its being a drip candle? A. No.

Q. Are there any multiple coloring materials in the candle? A. No. One color at a time.

Q. And there is no concealment at the ends of the candle of even that color; is that not right?

A. It would have a tendency to show, although not necessarily so. It could be covered up by the white wax.

Q. Didn't Hausamann use the device primarily as a trade-mark to indicate——

A. I think he did as an identification.

Q. He wouldn't cover it up then, would he?

A. No, not necessarily so.

Q. Now, I am particularly concerned about your direct [197] testimony relating to Exhibit G, the Sterry British patent. I believe you testified, Mr. Muench, that in the preparation of that exhibit you ironed into the wick successively aniline blue, aniline pink, and aniline violet dyes; am I correct? This patent says nothing about forming drippings, am I not right?

A. No, it does not call for drippings.

Q. Does it say anything about ironing colors into the wick?

A. That is the way I read it some place in there.

The Court: That is the Sterry patent?

Mr. White: Yes, your Honor.

(Testimony of Norbert C. H. Muench.)

Mr. Lyon: I am reading the wrong patent.

Mr. White: If I may, I should like to read the very brief specification starting on page 3 at about line 10.

The Court: You mean you are leaving all this out about "Her most Excellent Majesty Queen Victoria"?

Mr. White: Yes, your Honor. "In order to get a pearly transparent character of candle it is at present necessary to use paraffine very free from color, the cost in preparing which is great. I find however that while using a comparatively cheap paraffine I can obtain a pearly white by simply employing in lieu of the ordinary wick a wick having a blue or violet color, which color subdues the cloudy character of the inferior paraffine and greatly enhances [198] the marketable value of the candle without deteriorating its illuminating property. The coloring of the wick may be effected by dying the same, or printing or coating the wick with the appropriate or desired color or shade.

"When it is desired to give the candle a tinted hue, such, for example, as pink, I prepare the wick of the required color, and by its use a corresponding but subdued tint will appear to be diffused through the moulded material of the candle.

"The Invention is applicable not only where inferior paraffine or other inferior semi-transparent material is used, but also where the best qualities of these materials are employed, as their appearance is thereby enhanced, though not perhaps in the

(Testimony of Norbert C. H. Muench.)

same proportion as when materials of an inferior color are used in the manufacture of candles. In coloring the wicks I prefer to tint only those parts which are intended to be embedded in the paraffine or other semi-transparent material, leaving white the exposed ends. Various modes may be adopted for imparting the color. Thus for example a length of plaited wick may be passed down to and between a pair of printing rollers mounted in a vessel containing the dye liquor and rotating in contact with that liquor. A tube standing upwards through the liquor in a line with the nip of the rollers will receive the wick as it leaves the printing rollers and pass it out through the bottom of the vessel. To provide for the partial printing of the wick the shafts of the rollers may be severally provided with a cam piece or cam pieces, which as the rollers rotate will come into contact and force the rollers apart, thus leaving the wick to which a continuous motion (independent of the printing rollers), is given to pass on for a given distance, say two or three inches without any color being imparted thereto. As the wick leaves the dye vessel it may be dried by being passed over a steam heated roller or in any other convenient manner. The dye which I prefer to use for imparting the pearly lustre to candles is a solution of aniline blue or violet, being the color required for this purpose. I do not propose to confine myself to the use of aniline colors but in general they will be preferred, as they offer no difficulty to the proper burning of the wick. The

(Testimony of Norbert C. H. Muench.)

colors and tints employed may vary according to taste.

Now, this patentee was not concerned even with coloring the flame, was he, Mr. Muench?

The Witness: No, sir. [200]

Q. In the preparation of your Exhibit G, you find your candle to be tinted by the coloring in the wick?

A. It is most logical that it would be tinted.

Q. But is it? A. Yes, it is.

Q. Is that the dye on the wick that we see on the outside of that candle?

A. Yes, that is bled through.

Q. Does that candle have a pearly luster?

A. Some people might call that a pearly luster.

The Court: Black pearl?

The Witness: Something like that. It is sort of a bluish pearl. Pearlescent, you might call it.

Q. (By Mr. White): Now where in the Sterry patent, Mr. Muench, do you find any reference to coating the wick successively with blue, pink and violet aniline dyes?

A. I combined the three in the one candle. It does not mention it in the patent that they use more than one color at a time, but it mentions the three of them as using any or all of them, I take it.

The Court: Is there not another candle that was partially burned that was built after the teachings of this patent?

(The exhibit referred to was passed to the court.) [201]

(Testimony of Norbert C. H. Muench.)

Q. (By Mr. White): Therefore as that exhibit is made it does not correspond to the description in the Sterry patent, is that not right?

The Court: What exhibit does the witness have?

Mr. White: G.

The Witness: This is a similar candle.

The Court: No, this is G.

Mr. White: I understood that he was looking at a duplicate, your Honor.

Mr. Lyon: This is not an exhibit, your Honor; it is just another candle we prepared in accordance with the teachings of the patent.

The Court: That is not Exhibit G.

Mr. White: I want Exhibit G.

The Court: This is the one. This one has not anything on the outside except the drippings.

The Witness: That is right. That is a fresher candle. That is a newer candle.

Mr. White: May I examine it a minute, your Honor?

(The exhibit referred to was passed to counsel.)

The Court: You had better ask him over again because he was talking about another Exhibit G.

The Witness: That one in Mr. Lyon's hand is with one color on the wick, blue. [202]

Q. (By Mr. White): Would that not be more in keeping with the teachings of the patent than what I have in my hand?

A. In that it only has one color, yes.

(Testimony of Norbert C. H. Muench.)

Mr. White: May we have that in evidence, please?

Mr. Lyon: That is agreeable.

The Court: We will call that G-2.

(The exhibit referred to was received in evidence and marked Defendants' Exhibit G-2.)

Q. (By Mr. White): The one I hold in my hand does not correspond with any description in the Sterry patent, is that not right?

A. If you are referring to the three colors——

Q. Right. A. That is right.

The Court: You were talking about ironing it. He read the specifications here.

The Witness: I used the word "iron." I could have possibly used the word "roller" too but I pressed it.

The Court: To steam-heat the color? In other words, you take that to mean an ironing or pressing?

The Witness: Yes.

The Court: And that was for the purpose of drying it, is that right?

The Witness: Yes, to get it in and dry it. [203]

The Court: Very well.

Mr. Lyon: We have had a candle going here in evidence without much in the way of identification of it.

The Court: Well, G-2, the record will show that the witness has testified that it is a candle manufactured by the defendant following the teachings of his concept of the teachings of the Sterry patent

(Testimony of Norbert C. H. Muench.)

and that there was only one color used in the wick and that was blue.

Mr. Lyon: That was aniline blue.

The Witness : Aniline blue.

Mr. Lyon: How many ply in the wick?

The Witness: I think that was a 30-ply.

The Court: I wonder if we might have another short recess. I have a telephone call to make.

(Short recess.)

Mr. Lyon: If the court please, I think the Star Pillar candle has burned enough so may we blow it out?

The Court: I have no objection if none of the parties do.

Very well: Proceed.

Mr. White: Your Honor, Plaintiff's Exhibit 4-C has suffered another accident. The built-up drippings have now been ingloriously dropped to the bottom.

With the court's permission we would like to replace that exhibit or at least have in the record along with it [204] another correspondingly burned candle.

The Court: If there is no objection you can just take this out and put another one in and burn it down.

The Clerk: This candle is the same thing.

The Court: Let us move this exhibit over on the other candle and light it.

The Clerk: This was so loose and they have tightened up the other one.

(Testimony of Norbert C. H. Muench.)

The Court: Let us light this one and put it over here now.

Mr. White: I should like to read now into the record the remainder of the plaintiff's interrogatories and the defendants' answers to them and perhaps question the witness in connection with certain of them.

The Court: Question this witness?

Mr. White: Yes.

The Court: Very well.

Cross Examination—(Continued).

Q. (By Mr. White): Mr. Muench, Interrogatory I had described a drip candle in this language:

"A drip candle having a wax body and containing within its interior different wax-soluble dyes at different locations longitudinally of the body, the different dyes being concealed within the [205] candle body and being undissolved in any substantial portion of the body wax before the candle is burned, the dyes dissolving in the said portion of the body wax as the candle burns with resultant formation of a composite of different colored drippings as the candle progressively burns." Question No. 3 is this:

"Identify all publications prior to March 13, 1945, upon which defendant will rely, which individually disclose a candle as defined in Interrogatory 1, and in so doing state specifically by reference to page and line numbers where such disclo-

(Testimony of Norbert C. H. Muench.)

sure is contained in any publication identified in response hereto."

Answer:

"U. S. letters patent to Nelson 1,908,044 and U. S. letters patent to Fredericks 2,184,666."

The absence in that answer to any reference to page and line numbers is because you are unable to find any specific reference which you could make by giving me page and line numbers which would so describe a candle, is that not right?

Mr. Lyon: I object to that. You are perfectly aware of the fact that the answer to Interrogatory No. 12, that the witness has stated that the entire specification——

Mr. White: I object to any objection on [206] your part, counsel, that is not predicated upon the propriety of my question as confined to Interrogatory No. 3, and I asked for reference to page and line numbers and I believe I am entitled to ask the witness why I did not get them.

The Court: I think that is right. The objection is overruled.

The Witness: Will you ask that question again, please, Mr. White?

The Court: Do not read the whole question, just the question part of it.

(The question referred to was read by the reporter as follows:

("The absence in that answer to any reference to page and line numbers is because you are unable to find any specific reference which

(Testimony of Norbert C. H. Muench.)

you could make by giving me page and line numbers which would so describe a candle, is that not right.")

The Witness: Well, you mention a candle. I don't know what kind of a candle you mean there. Do you mean a drip candle or a colored flame candle?

Q. (By Mr. White): Are you looking at a copy of these interrogatories? A. Yes, sir.

Q. Will you refer back to Question No. 1 in which my definition of a drip candle is contained? That is what we are [207] talking about.

A. A drip candle? [208]

Q. Right.

A. You want to know whether a drip candle is referred to in either of those two patents?

Q. I want to know whether you can give me the page and line numbers where either of those patents disclose a candle as I have defined it in interrogatory 1.

The Court: Mr. Lyon, what are you doing?

Mr. Lyon. I am showing him the interrogatories.

The Court: He has the interrogatories before him. He has a copy.

The Witness: Well, I can't give you the line, because the whole patent, as I see it, read upon a drip candle there.

Q. (By Mr. White): Isn't it true, Mr. Muench, you can't give me the page and line number because they are not there?

A. I would say that the whole patent as such

(Testimony of Norbert C. H. Muench.)

reads on it. So if I took out part of it—It forms a candle with successive colors, and the candles drip much better than they burn with a flame, colored flame.

Q. Mr. Muench, I don't want to appear argumentative, that is not my purpose; I merely want reference to page and line numbers in the Nelson and Frederick patents where there is disclosed a candle as I have defined it in interrogatory 1.

The Court: I think he has answered it. He said in his opinion the whole patent describes that kind of a candle. [209]

Q. (By Mr. White): That, however, is a conclusion, is it not—— .

The Court: Quite obviously. All he is doing is expressing his opinion.

The Witness: If I pick anything out of the whole thing, it would be taking it out of context. I can't do that.

Q. (By Mr. White): The Fredericks and Nelson patents you have interpreted as describing what you have made in your exhibits, is that not right?

A. Yes, I tried to follow to the best of my ability what I considered the description of the candles.

Q. I think I am entitled to this bit of information, for you to show me, by referring to where in the Fredericks patent any description is contained of the candle as you have made it. And I am now talking about your Exhibits E and E-2.

The Court: That is the Fredericks patent?

(Testimony of Norbert C. H. Muench.)

Mr. White: That is the Fredericks patent.

The Court: What do you want to know now? What are you asking him?

Mr. White: He has described to us the making of a drip candle containing certain coloring materials. Now I want to know where in the Fredericks patent you find anything of that sort described in terms that would direct anyone to make the candle as you have made it.

The Witness: Do you mean where I said that I dipped the [210] wick into melted petrolatum, and those things?

Q. (By Mr. White): No. I am talking about coloring, and I am talking about dripping. Now, those are the essential things that go into this candle. I want to know right where Fredericks told you to do what you did in making your exhibits.

A. As I read it, I wrote it down as I made the candles. Now——

Q. Did you copy from Fredericks?

A. I interpreted according to the notes I read before, as I made the candles.

Q. All right. Let's call it an interpretation then. What did you specifically interpret as meaning what you have shown us here in your exhibits?

A. I interpreted the matter of the method of making the candles.

Q. Now, where is that referred to in this Fredericks patent?

A. It looks as though most of the context of the Fredericks patent tells you how to make it, and

(Testimony of Norbert C. H. Muench.)

it lists several other points in regard to certain salts.

Q. All right. Where do you find in the Fredericks patent those certain salts?

A. Well, these salts here that I used are possibly modifications of those, but they are basically on that basis. [211] For instance——

Q. Do you mean they are chemically similar?

A. Yes.

Q. Do I understand that you are not qualified as a chemist?

A. That's right. For instance, here in the list that I gave you on colors, copper acetate is listed in the Fredericks patent, calciumm acetate is listed.

Q. Did you use calcium acetate?

A. No, I didn't. I used copper acetate, and I used a copper nitrate.

Q. Did you use copper nitrate? A. Yes.

Q. In what exhibit?

A. Wait a minute. In the first—I don't remember what those exhibits are numbered. It was the first candle that was put in evidence using copper acetate, iron salts, copper chloride.

Q. You used copper chloride and not copper nitrate, is that correct?

A. Yes. But copper nitrate is listed as being permissible to use.

Q. I think we have agreed that you can't find the rest of it in the Fredericks patent, and here I am talking about the dripping and the presence of cadmium sulphide or even [212] spinel.

(Testimony of Norbert C. H. Muench.)

A. Ferric means iron, doesn't it? Ferrous is an iron metal, and ferric acetate is listed.

Q. Did you use them? A. Ferric hydrate.

Q. Did you use them?

A. I used the iron salt with the long name that I gave you. Which certainly is made of iron, because it is listed as iron salts. Which type of ferric salts it is, I can't say from this name. Maybe some chemist could. I can't even pronounce the name.

Mr. White: I feel that we are getting nowhere fast with this line of examination, and to shorten it, I want to state for the record that I had asked for reference to page and line numbers concerning a candle as identified in interrogatory No. 1. You have not supplied it, and I say for the purpose of the record, and as I believe can be borne out by reference to the Fredericks patent itself, such is not in the patent.

The Court: Well, that is for you and Mr. Lyon to argue about.

Mr. White: Right. And the same observation applies to Nelson.

The Court: As far as this witness is concerned, his opinion is, if I understand what he desires his testimony to be—or let me put it this way: That I understand that he [213] desires his testimony to be, in effect, as I understood it, that in his opinion all of the Nelson patent and all of the Fredericks patent read on claim 1 of the Wilson patent.

(Testimony of Norbert C. H. Muench.)

Is that it?

The Witness: Yes, sir.

Mr. White: And I interpret his answer to be based only on opinion and not fact. [214]

Mr. White: Question No. 4:

"Identify all publications prior to March 13, 1945, upon which defendant will rely, which individually disclose a candle as defined in Interrogatory 1, and in so doing state specifically where by reference to page and line numbers where such disclosure is contained in any publication identified in response hereto.

"Answer: U. S. Letters Patent to Nelson 1,908,044 and U. S. Letters Patent to Fredericks 2,184,666."

Q. Here again the question called for reference to page and line numbers, and may I take it to be your position and answer, Mr. Muench, that you include the patents as a whole to so disclose a candle defined in Question 2? A. Yes.

Q. That that is your opinion?

A. Yes, the same as I had on the other one, in the first interrogatory.

Mr. White: And in contemplation of argument on this point I believe that the court might be interested in any such reference if it does exist.

"Question 11: (a) Does defendant contend that a candle made according to any of the descriptions or examples given in the Funke patent 1,701,844, at [215] lines 29 to 93, will upon burning form, successively and to any considerable extent, on the

(Testimony of Norbert C. H. Muench.)

body of the candle different colored drippings colored differently from the candle body?

"(b) If the answer to the foregoing is in the affirmative, designate specifically wherein the stated portion of the Fuchs patent describes a candle which is so operative in fact.

"Answer: (a) No.

"(b) No answer required.

"Question 12: (a) Does defendant contend that a candle made according to any of the specified description or examples given in the Fredericks patent 2,184,666 on page 2, lines 5 to 75 of column 1, and lines 1 to 65 of column 2, will upon burning form successively and to any considerable extent on the body of the candle different colored drippings colored differently from the candle body?"

The Court: The answer to that?

Mr. White: The answer to that is "yes."

Q. Wherein is that disclosure? Would you care to quote to me the words, Mr. Muench?

A. Well, the specifications, the way they read to me show, here is a candle that you are putting salts in as described by Fredericks into the body of the candle that isn't [216] consumable in the wick, there is no place for it to go but to drip.

Q. Just a moment. Do we both understand the question?

I laid out in reference to lines a certain section of the Fredericks patent, and my question is merely to ask you to read that portion within that delineation that does so describe the candle.

(Testimony of Herbert C. H. Hunnah.)

A. I thought we had taken care of that. I can't take any part of it out without going to the rest of it, as I see it, Mr. White.

Q. Very well.

The Court: Well, your answer is that the entire specifications of the Fredericks patent discloses a candle which upon burning will form successively on the body of the candle different colored drippings colored differently from the candle body?

The Witness: Yes, sir.

The Court: In other words, that is your answer, your opinion and your position?

The Witness: Yes, sir. It cannot be any other place.

The Court: Let us get on, counsel.

Mr. White: Question 12:

"(b) If the answer to the foregoing is in the affirmative, designate specifically wherein the stated portions of the Nelson patent describes a [217] candle which is so operative in fact."

The answer to that:

"The entire specification of the Nelson patent discloses a candle which upon burning will form successively on the body of the candle different colored drippings colored differently from the candle body.

Question 12 (c):

"In further reference to the Fredericks patent, does strontium chloride significantly change the color of white candle wax by admixture therewith?

(Testimony of Norbert C. H. Muench.)

"Answer: (c) No, as strontium chloride is white."

I should like to move that the remainder of the answer be stricken, which is, "Strontium bromate, Strontium nitrate——"

The Court:: You do not have to strike it. If you do not want to read it in the record it is not in the record.

Mr. Lyon: I submit that the whole of the answer should go in if any of it goes in.

Mr. White: Obviously it is an attempt to aggrandize an otherwise hopeless answer by talking about something else that I didn't ask about.

The Court: Very well. If you do not care [218] to read it, it is not in the record. Go ahead.

Mr. White: Question 12 (d):

"Does defendant contend that cupric chloride is an effective and satisfactory material for use in white drip candles to color their drippings?

"Answer: (d) Yes.

"Question 12: (e) Does cadium chloride significantly change the color of white candle wax by admixture therewith?

"Answer: (e) No, because the crystals are again white."

Now Question 13:

"(a) Does defendant contend that a candle made according to any of the descriptions or examples given in the Nelson patent 1,908,044, at lines 84 to 100 on page 1, and lines 1 to 15 on page 2, will upon burning form successively and to any considerable

(Testimony of Norbert C. H. Muench.)

extent on the body of the candle different colored drippings colored differently from the candle body?

"Answer: (a) Yes."

Q. In connection with that answer, Mr. Muench, I believe that your intended answer is that it is your conclusion that the Nelson patent in its entirety teaches that? A. Yes, sir. [219]

Q. And you have not undertaken to answer only in reference to what I had delineated in the question, is that not right?

A. I think the whole patent is dependent upon each part of the other.

Mr. White: Question 13:

"(b) If the answer to the foregoing is in the affirmative, designate specifically wherein the stated portion of the Nelson patent describes a candle which is so operative in fact.

"Answer: (b) The entire specification of the Nelson patent discloses a candle which upon burning will form successively on the body of the candle different colored drippings colored differently from the candle body."

The Court: Is it agreeable now that this substituted candle be blown out, Exhibit 4-C?

Mr. White: Yes, your Honor.

Mr. Lyon: Yes.

The Court: Let the record show I have done so.

Mr. White: I will omit Question 14 only for the reason that the testimony here I think has served the purpose of identifying the British Field patent.

(Testimony of Norbert C. H. Muench.)

"Question 17: Does defendant contend that candles as made according to the Funke, Nelson [220] and Fredericks patents referred to in Interrogatories 11 through 13, will upon burning produce coloring of their flames as represented by the patentees that the flames will be colored?

"Answer: To some extent, yes."

Q. Our performance of burning here indicated, Mr. Muench, that the flames gave an occasional color spit, is that not right?

A. Yes, partially.

Q. And is that what the patentee said they would do?

A. No, they possibly claimed a lot more color for them but so far as our tests showed it was only a partial coloring of the flame.

Mr. White: Question 18:

"Designate which of the following compounds defendant knows to be available from suppliers and capable of practical and workable use in the making of candles like or similar to defendant's 'Make-a-Rainbow' or 'Cascade' candles, and for the effective coloring of drippings produced upon burning of the candles."

With the court's permission, in order to shorten time here, would it be satisfactory for the reporter to copy these lists of chemicals in?

The Court: Yes. You can read the answer. [221]

(Reporter's note: The list of chemicals referred to is, in words and figures as follows, to wit:)

(Testimony of Norbert C. H. Muench.)

Chlorides of:	Nitrates of:	Nitrates of:
sodium	sodium	sodium
potassium	potassium	potassium
lithium	lithium	lithium
boron	boron	boron
thorium	thorium	thorium
strontium	strontium	strontium
iron	iron	iron
copper	copper	copper
calcium	calcium	calcium
barium	barium	barium
cerium	cerium	cerium
zinc	zinc	zinc

Acetates of:	Oxysalts of:	Ammoniates of:
sodium	sodium	sodium
potassium	potassium	potassium
lithium	lithium	lithium
boron	boron	boron
thorium	thorium	thorium
strontium	strontium	strontium
iron	iron	iron
copper	copper	copper
calcium	calcium	calcium
barium	barium	barium
cerium	cerium	cerium
zinc	zinc	zinc

Chlorates of:	Perchlorates of:	Alcoholates of:
sodium	sodium	sodium
potassium	potassium	potassium
lithium	lithium	lithium
boron	boron	boron
thorium	thorium	thorium
strontium	strontium	strontium
iron	iron	iron
copper	copper	copper
calcium	calcium	calcium

barium	barium	barium
cerium	cerium	cerium
zinc	zinc	zinc
Oxides of:	**Sulphates of:**	**Hydroxides of:**
sodium	sodium	sodium
potassium	potassium	potassium
lithium	lithium	lithium
boron	boron	boron
thorium	thorium	thorium
strontium	strontium	strontium
iron	iron	iron
copper	copper	copper
calcium	calcium	calcium
barium	barium	barium
cerium	cerium	cerium
zinc	zinc	zinc

Metals

Powdered aluminum
Powdered magnesium

Mr. White: The answer——

The Court: Why not let the reporter copy in the answer too? It is rather long and I have read it.

Is that agreeable?

Mr. Lyon: That is agreeable.

Mr. White: Yes.

(The answer referred to is, in words and figures, as follows, to wit:)

"Answer: Defendant is informed that the following compounds can be used to color wax drippings of a candle: [224]

Toluidine—Red

Barium Chromate—Yellow

(Testimony of Norbert C. H. Muench.)

Sodium Silicate and Aluminum — Ultramaring Blue

Uranium Dioxide—Black

Benzene Sulfonate of Sodium—Methyl Orange

Copper Acetate—Green (Bluish)

Calcium Acetate—Gray

Ferric Acetate—Red Powder

Zinc Acetate—In combination with Alizarin Blue

Copper Nitrate—Blue

Copper Oxide—Red

Copper Stearate—Light Blue

Copper Sulfate—Blue Vitrol

Copper Hydroxide—Blue

Ferric Ammonium Sulfate—Lilac

Ferric Hydroxide—in combination with oil creates a brown

Ferric Nitrate—in mixture with stearic—Violet

Ferric Oxide—Red (Prussian Red)

Ferrocyanide Salt—Prussian Blue known as Iron Blue, also Chinese Blue.

The Court: Now you want to ask the witness a question?

Mr. White: Yes, thank you.

Q. Mr. Muench, that list of compounds and materials [225] which you see on pages 11 and 12 represent the compounds and materials referred to in the Nelson and Fredericks patents, is that not right?

A. I take it that is true basically on the way you have it on those two pages.

Q. And all together they number 146, is that not right?

(Testimony of Norbert C. H. Muench.)

Mr. Lyon: I don't see any mention there of selenium in any of that. Maybe it is there. I just don't see it.

Mr. White: Has selenium been used by the defendant in the preparation of any exhibits under the Nelson, Fredericks and Funke patents?

Mr. Lyon: I understand so.

The Witness: In the orange red 621 it is listed as a combination of cadmium, sulfo and selenide.

The Court: In what?

The Witness: In what I used in the Fredericks patent, the orange red 621. It is manufactured from cadmium sulfo selenides.

Q. (By Mr. White): And we have established that that compound as such was not mentioned in Nelson or Fredericks' patents.

The Witness: As a compound.

Mr. Lyon: This establishes just what it does say. It calls for salts of selenium. [226]

Mr. White: Correct.

Mr. Lyon: And you haven't listed any salt of selenium in this interrogatory.

Mr. White: If it is absent from the interrogatory is was purely an oversight.

Where do we have reference to selenium in the Nelson or Fredericks patents?

Mr. Lyon: I will show you.

The Court: On the Nelson patent it is in column 1, line 49, selenium salts produce a light blue flame. In the Fredericks I do not know.

Mr. Lyon: It is not in the Fredericks

(Testimony of Norbert C. H. Muench.)

Mr. White: This list should have included selenium salts.

The Court: Then I take it your question is whether or not selenium salts is available from suppliers and capable of practical and workable use in the making of candles like or similar to the defendant's "Make-a-Rainbow" or "Cascade" candles and for the effective coloring of drippings produced upon burning of the candles.

Did you hear that question?

The Witness: Yes.

The Court: Is it?

The Witness: Yes.

The Court: Very well. [227]

Q. (By Mr. White): Now, as to the remaining compounds listed on pages 11 and 12 of the interrogatory answers, I would like to refer to the answer on page 13: "Defendant is informed that the following compounds can be used to color wax drippings of a candle: toluidine"—do you find toluidine included in any of the materials listed on pages 11 and 12?

A. A lot of those came out of this condensed chemical dictionary by Reinhold. Shall I look up toluidine and see what he says about it?

Q. Well, you have recently answered the interrogatory, have you not?

A. Yes. But I can't remember——

The Court: He can't remember that. He can have reference to a reference work. What is it?

The Witness: Toluidine——

(Testimony of Norbert C. H. Muench.)

The Court: What is your reference work?

The Witness: Condensed Chemical Dictionary, Fourth Edition, by Reinhold.

The Court: Published by——

The Witness: Published by Reinhold Publishing Company in 1950, 330 West 42nd Street, New York City.

The Court: All right. Now, is toluidine a chloride, or nitrate, or acetate, or oxy salt, or ammoniate, or chlorate, or perchlorate, or alcoholate, or oxide, or sulphide, or [228] hydroxide, of anything?

Mr. Lyon: Do you know?

The Witness: Only what it says there.

The Court: You can have reference to your book.

Mr. Lyon: It gives a chemical formula in here, your Honor. $CH_3C_6H_4NH_2$. Now, NH_2 is an ammonium radical. I am not enough of a chemist, but it would indicate to me that might be an ammoniate.

The Court: All right.

I take it you are going to go down the list with this witness on all of these and ask him whether or not they come in any of these categories?

Mr. White: I think I can do it very briefly, your Honor.

The Court: I think you can do it more briefly in the morning after the witness has a chance to look these up, inasmuch as you are telegraphing blows.

We are now recessed until 10:00 a.m. tomorrow. It may be possible that I will not be able to devote

the whole morning to this, but I won't know until tomorrow. Recess to 10:00 a.m. tomorrow.

(Whereupon, at 4:30 o'clock p.m., an adjournment was taken to 10:00 o'clock a.m., Thursday, March 22, 1956.) [229]

The Court: Any ex parte matters?

The Clerk: No, your Honor.

The Court: Proceed.

Mr. Lyon: If the court please, after adjournment last night we huddled with the learned textbooks and it appears that the answer to Interrogatory No. 18 we should probably not have included toluidine, red, as it appears that it is more related to the aniline type dye.

The Court: You should not have included what, toluidine?

Mr. Lyon: Put it this way: We are willing to stipulate that it may be stricken from that answer if Mr. White wishes.

The Court: That what may? I did not hear it.

Mr. Lyon: Toluidine, red,

The Court: That that may be stricken? Is that stipulation acceptable?

Mr. White: Yes, your Honor.

The Court: Very well.

Mr. Lyon: Yes, your Honor.

The Court: Is it agreeable if I just draw a line through toluidine, red, in the original?

Mr. Lyon: Yes, sir.

Mr. White: Yes.

The Court: And initial it. [233]

Mr. Lyon: I will do the same on our copy.

NORBERT C. H. MUENCH

the witness on the stand at the time of adjournment, resumed the stand and testified further as follows:

Cross Examination—(Continued)

Q. (By Mr. White): Mr. Muench, we have just deleted toluidine from your answer in Interrogatory 18.

We come next to barium chromate. Do you find in either the Nelson or Fredericks patents reference to any chromates?

A. No, but barium is listed.

Q. But you do not find any chromates?

A. No, sir.

Q. Chromium is a metal as well as barium is a metal, is that not right? A. Yes, sir.

Q. Where in either the Nelson or Fredericks patents do you find reference to a silicate in the third compound appearing in your answer, where you say sodium silicate and aluminum? Where in either of those patents do you find a reference to a silicate?

A. Silicate is not listed but sodium is.

Q. Silica is a metal as well as sodium, is it not?

A. Yes, sir.

Q. And those patents represent that metals are supposed [234] to produce flame coloring, do they not?

A. Yes, but I didn't know that he was expected to mention all the metals.

Q. If you will please confine your answers to my questions.

(Testimony of Norbert C. H. Muench.)

The material there designated also includes aluminum. Will aluminum color a wax?

A. Aluminum possibly will—or, color wax? No, except that it will give it a sort of a silvery sheen.

Q. Will it dissolve in wax? A. No.

Q. Do not the materials which you use to color your candles dissolve in wax?

A. Not all of them. We use Prussian blue which does not entirely dissolve in the wax.

Q. The dyes that you use in your Make-a-Rainbow candle do, don't they?

A. Will you state that again?

Q. The dyes which you use in your Make-a-Rainbow candles dissolve in wax, don't they?

A. Most of them, yes.

Q. Now we come to uranium dioxide. Where in either of the Nelson or Fredericks patents do you find reference to uranium?

A. Uranium is not listed by oxides are. [235]

Q. Will you please confine your answers to my questions?

Do you find uranium referred to in either patent?

A. No, sir.

Q. We now come to benzene sulfonate of sodium. Do you have any reference in either Nelson or Fredericks to any benzene sulfonate?

A. No, sir. [236]

Q. Do you contend this to be a compound of sodium?

A. Well, I would say yes, from my layman's approach.

(Testimony of Norbert C. H. Muench.)

Q. Do all sodium compounds color wax?

A. I would say yes, because sodium has a tendency to color yellow.

Q. Have you ever mixed sodium chloride with wax? A. No, sir.

Q. Table salt, you have never mixed with wax?

A. Well, frankly, I never did.

Q. What do you think would happen if you mixed table salt with wax?

A. It would have a tendency to cause a yellowish flame slightly, I would say. But that is an estimate. I never mixed table salt with wax.

Q. I didn't ask you, Mr. Muench, what it would do to the flame; I asked you what it would do to the color of the wax? White sodium chloride.

A. White salts would not color any white wax of any type.

Q. At about line 15 we find reference to——

Mr. Lyon: Why do you skip the next five or six that you know he can find in the patent?

Mr. White: I will give you credit for those out of 146, which I have set forth in my question. To answer your question, I will give you credit for having come forth with 10 [237] out of 146.

Q. (By Mr. White): We come now to copper stearate; do you find reference in either Fredericks or Nelson to any stearate? A. No.

Q. Below we come to ferric ammonium sulphate; do you find reference in either Fredericks or Nelson to any ferric ammonium compounds?

A. Ferric means iron, of course, I am inclined

(Testimony of Norbert C. H. Muench.)

to think that it does mention ferric ammonium sulphate. Whether by that name or a combination, I am not sure. Possibly you having studied it may be able to enlighten me on that.

Q. Does ferric ammonium sulphate produce the same color, does it have the same color as ferric sulphate?

A. I imagine the ammonium adds something to it.

Q. I imagine so.

Now, we come to ferric hydroxide in combination with oil; does either Nelson or Fredericks say anything about ferric hydroxide in combination with oil?

A. I believe it only mentions the ferric hydroxide, but not the combination with oil.

Q. Last on the list we come to ferrocyanide; do you find any reference in Nelson or Fredericks to any ferrocyanide, or any cyanide compounds?

A. No cyanide. It mentions potassium and iron, but no [238] cyanide.

Q. So am I not correct in saying that you have included in your answer those compounds which I have specifically referred to in the preceding questions gratuitously and without having any reference to them in the Nelson and Fredericks patents?

A. Well, that is true, Mr. White. When I made up this list, I was looking for salts that would color the wax and drip down due to its being a metallic salt. I do know, for instance, prussian blue there, which apparently ferrocyanide salt is — prussian

(Testimony of Norbert C. H. Muench.)

blue is an old coloring agent used by candle people for many years.

Q. Therefore, if Nelson or Fredericks had intended to color their way, they probably would have mentioned prussian blue, is that not right?

A. Yes. They probably weren't out to primarily color their wax. They certainly must have known that those candles dripped, though.

Q. They certainly must have known that those compounds existed, too; is that not a logical supposition?

The Court: Isn't that argumentative, counsel?

Mr. White: Yes, your Honor.

The Court: How would this witness know what they knew?

Mr. White: Yes, your Honor, it is. [239]

Q. (By Mr. White): Now, Mr. Muench, did you find all these compounds that we have been talking about in Syracuse? A. These here?

Q. Yes.

A. No, sir. I didn't find them all there. As you said yesterday, maybe if I would have taken a trip to New York I would have found them.

Q. Well, you went outside of Syracuse to get those compounds, did you not?

A. I got them through local agencies.

Q. And did you make inquiry through local agencies for the other compounds which you yesterday testified were not available around Syracuse?

A. I tried to get them there. Had I known the way this would work out, I certainly would have

(Testimony of Norbert C. H. Muench.)

gone out further than Syracuse to buy them. As you said, they undoubtedly are available.

Q. Reading now into the record interrogatory 19——

Mr. Lyon: Do you want to put in the rest of interrogatory 18?

Mr. White: I understand, counsel, that the reporter copied that full question and answer into the record as per our understanding of yesterday.

Mr. Lyon: Okay.

Q. (By Mr. White): 19. "Which of such coloring [240] compounds as defendant may list in answer to interrogatory 17, has defendant actually used in either its Make-a-Rainbow or Cascade or any other similar commercially sold candles?

"A. Copper acetate."

Mr. Lyon: Excuse me, Mr. White. He did not copy into the record the paragraph beginning at line 25 on page 13 and concluding at line 29.

Mr. White: It was my understanding that the entire answer was to be copied. So to make the record complete, we will now read the last paragraph of the answer to interrogatory 18:

"Whether each of these is available commercially, we cannot say. Certainly copper, calcium, iron and zinc acetates are. Copper and iron oxides, copper chloride, copper and iron sulphates, copper and iron hydroxides and copper and iron nitrates are."

Q. (By Mr. White): Now, Mr. Muench, why the emphasis on copper?

A. Well, copper just happens to be a good one.

(Testimony of Norbert C. H. Muench.)

You don't go out and pick out that isn't any good, like the selenium. You might pick that, but I would pick copper.

Q. As a matter of fact, in your exhibits which are alleged to follow Nelson and Fredericks, copper compounds are the only ones you have used that have been referred to in those patents; is that not right? [241]

A. We may have emphasized the copper because we were used to it in our candle business.

Q. Just a moment. Is that not right, copper compounds are the only ones that you use in those exhibits?

Mr. Lyon: I object to that. There is iron salts in one of those exhibits.

Q. (By Mr. White): Do the iron salts that were used— Are we not referring to the spinel?

Mr. Lyon: Ask the question of the witness.

Q. (By Mr. White): Mr. Muench, when we come to the iron compounds used in your exhibits representing the Nelson and Frederick's patents, were not the iron compounds spinels?

A. No. This one with the long name, which I don't believe anybody can pronounce, I do not believe is a spinel.

Q. Was that found in Nelson or Fredericks?

A. By that long name? No; it is an iron salt. If you carried back to just basic iron, cadmium, selenium, and so forth, most of these salts have developed so that these drug houses, dye outfits, have

(Testimony of Norbert C. H. Muench.)

combinations. They make them up, and that is the way we have to buy them. [242]

Q. Those were not developed at the time of Nelson and Fredericks, were they?

A. I wouldn't know.

Q. I am talking about things that Nelson and Fredericks actually mentioned.

Now do all iron compounds behave similarly so far as coloring wax is concerned?

A. I would think so, Mr. White. Of course I haven't tried out all iron compounds.

Q. Well, then, for the purpose of your exhibit why didn't you use one that was named in the Nelson or Fredericks patents instead of going to this long involved organic compound?

A. Well, it just so happened that when we looked for it this one turned up. It is like going into a restaurant and taking what is on the menu.

Q. Certainly around Syracuse there is plenty of iron oxide, isn't there?

A. Well, maybe there is. I couldn't answer that for sure. Possibly anyplace there is a lot of iron oxide.

Q. And probably a lot of iron hydroxide?

A. Possibly.

Q. Probably some iron chloride?

A. Possibly.

Q. Far more usual compounds than the iron compound [243] that you used in the preparation of of the Nelson and Fredericks exhibits, they are much more common, aren't they?

(Testimony of Norbert C. H. Muench.)

A. But isn't this an iron compound——

Q. Are they not much more common, Mr. Muench?

A. Well, if you say so I will go along with you, but I don't know exactly how common any of them are.

Q. Going back to this final paragraph in the answer to Interrogatory 18.

In your examples allegedly representing Nelson and Fredericks you employed, did you not, copper chloride and copper acetate? I am speaking of them collectively.

The Court: Let me hear that question again.

(The question referred to was read by the reporter as follows:

("Q. In your examples allegedly representing Nelson and Fredericks you employed, did you not, copper chloride and copper acetate? I am speaking of them collectively.")

The Witness: I am sorry. I didn't know that that was a question.

Yes, we employed them.

Q. (By Mr. White): I believe you have testified that the other compounds which you employed were not specifically mentioned in either patent. [244]

The Court: If he has testified let us let it go at that without going over it again.

Q. (By Mr. White): Now referring to the compounds listed in the answer to Interrogatory 18, would you consider practical the use of calcium

(Testimony of Norbert C. H. Muench.)

acetate as a wax coloring material in a candle like your Make-a-Rainbow candle?

A. I would much rather have a brighter color than gray.

Q. Would you use zinc acetate alone?

A. That would have a sort of a white appearance so I wouldn't use it alone.

Q. In your answer, however, you said in combination—— A. With blue.

Q. ——with alizarin blue? A. Yes.

Q. That, however, is a dye, isn't it?

A. Yes.

Q. Would you use satisfactorily copper nitrate?

A. Well, I would rather use copper acetate. I could use copper nitrate though because it would give a bluish appearance to the wax.

Q. A very faint blue, however?

A. That is right, a very light blue.

Q. What about copper oxide?

A. Copper oxide would have a tendency to show red [245] because the crystals are reddish.

Q. It wouldn't be a satisfactory coloring material to put in one of your commercial candles, though?

A. It would all depend on what shades you want. If you wanted light shades you could use that.

Q. But you don't use that color?

A. We don't use that, no.

Q. Would you use satisfactorily copper sulphate?

(Testimony of Norbert C. H. Muench.)

A. Copper sulphate I have used in making up a color out of blue vitriol.

Q. Could you use it as satisfactorily as a wax soluble dye?

A. We used it for coloringn. In fact——

Q. Mr. Muench, can you use it as satisfactorily as a wax soluble dye?

A. As a wax dye, yes.

Could you use it as satisfactorily as a wax soluble aniline dye? Would it be as satisfactory as the aniline dye?

A. Yes, for many purposes. It might be better than a wax soluble dye.

Q. Would it be as satisfactory in your Make-a-Rainbow candle? A. Yes.

Q. Would you have to use more or less that you would of the aniline dye? [246]

A. No, you wouldn't have to use more because the tendency for the metallic salts—they would have a tendency to plug up the wick and cause the candle to drip more than an aniline dye which would be consumed in its entirety.

Q. Which is more intense in color?

A. There are so many aniline dyes that I would have to make comparisons.

Q. What color would you get with copper sulphate?

A. Copper sulphate you might get a bluish color or a greenish color.

You know, that is blue vitriol, isn't it, copper sulphate?

(Testimony of Norbert C. H. Muench.)

Q. Right.

A. And way back in 1914 I personally made color with that. In fact I have got a book right here in my pocket that proves it, and we have used it ever since.

Q. But not in your Make-a-Rainbow drip candles?

A. We have used it in other candles. It is a dye just the same.

Q. Would you consider ferric ammonium sulfate satisfactory in one of your commercial Make-a-Rainbow candles?

A. Would we consider it satisfactory?

Q. Yes.

A. We would possibly use some other color in preferance to that because it would be easier to use for us. But [247[we could use it.

Q. How about ferric hydroxide alone?

A. I don't see any reason for not using it. We could use that too. It would give a red color to the wax.

Q. Why in listing it did you say in combination with oil creates a brown?

A. That the ferric oxide——

Q. I was speaking of ferric hydroxide.

A. Excuse me.

No, we possibly wouldn't mix it with oil but we could.

Mr. Lyon: I call your attention, Mr. White, to the fact that Fredericks calls for mixing his with oleic or stearic acids, which are oils.

(Testimony of Norbert C. H. Muench.)

Mr. White: That is a conclusion in the testimony of counsel. Would you say that all oleicanous materials are the same as stearic acid?

The Court: Let us argue the question to the court later on rather than debate it between you gentlemen now.

Q. (By Mr. White): Mr. Muench, I call your attention to Defendants' Exhibit N. As I understand the manufacture of the candle, the Make-a-Rainbow candle, which I believe was made starting sometime in 1952 by the process represented here——

A. We began September 5, 1952, to make the candles with the mother color on the core. [248]

Q. We have at the left what appears to be a wax coated wick.

A. Sort of a taper.

Q. And which I understand in the second tapered wick has been somewhat enlarged in diameter.

A. Yes, a little over a quarter of an inch in diameter.

Q. You would say approximately a quarter of an inch?

A. It could run between a quarter and three-eights, someplace in there.

Q. Now I understand that we see here applied to the outside of what I call the second step——

A. We call it the core.

Q. The core? A. Yes.

Q. ——a series of dyes starting at the top with pink—remembering that yesterday I was slightly

(Testimony of Norbert C. H. Muench.)

color-blind, so correct me if I am wrong—pink, lavender——

A. It looks more like purple to me.

Q. ——purple, then red, then yellow, then a yellowish orange——

A. That is sort of an orange, isn't it?

Q ——an then—— A. A blue.

Q. ——blue, then white, or the blue represents the end of the color? [249]

A. Yes.

Mr. Lyon: I think this came off the ribbon, Mr. White.

The Witness: No, I think that was on.

But the fact is this, that the order there we change occasionally. We change our dyes sometimes in the fall months when we will use different dyes than we will use in the spring months.

Q. (By Mr. White): Why do you change the order of them?

A. Well, we do that, we may run that color and then we may change from, say, this color because we may like a different color in there. We might put, say, a deeper orange or we will figure that this may not have enough heavy color, it may be too light, we may put a green in there, or any other color that we might use.

Q. If you kept them the same in the course of time your steady customers would be able to predict the succession of colors, would they not?

A. We never thought of that. I don't think anybody outside of somebody who wants to bet on the

(Testimony of Norbert C. H. Muench.)

way they turn up would care about that. Then they might like a variation.

But the reason we change is in order to have a novelty candle that is always new, and that is one reason why we do it.

For instance, in the winter on many of our candles we [250] put fall colors, as in the fall months, and in the spring, just before Easter, we will use more pastel shades.

A novelty candle is a constantly changing thing, Mr. White, and in order to stay in the field and be leaders you have to keep doing that all the time. That is why we get out a different catalog each year. [251]

Q. The unpredictability of the color occurrences is one of the attractive features in the candle, is it not?

A. You might call that the novelty of it, yes.

Q. After thin taper No. 2 has been coated, has had the coloring applied to it?

A. The colored wax, yes.

Q. That is colored wax containing aniline dye in each instance?

A. Aniline dyes. If we were using a green on that particular one, we would possibly use copper acetate, because that is what we usually use for green in our coloring of candles.

Q. But you haven't used it as yet?

A. Yes, we have used it in the past, but it doesn't happen to be on that particular sample.

(Testimony of Norbert C. H. Muench.)

Q. Or it has not been used in the making of your Make-a-Rainbow candle?

A. Yes, we have used them in the past, copper acetate.

Q. In your Make-a-Rainbow candle?

A. Yes.

Q. You referred to copper acetate?

A. Yes. It makes a green color.

Q. That is not a——

A. Wait a minute. We don't use the copper acetate directly on it, if that is what you mean. We make a green color [252] out of copper acetate.

I have here a formula that I wrote up way back in 1914 when I was with the Will & Baumer Company. Since we made it this way we have changed it some, but we still—at that time we used blue vitriol, now we use copper acetate which we buy from somebody like American Cyanamid, through one of their outfits.

Q. You have been familiar with the tendency of copper acetate, copper sulphate, to give coloring to wax for quite a long time, haven't you?

A. Yes. Well, here I have it since 1914, and before I was mixing it they were using it. And also prussian blue was used a good deal.

Q. You were familiar with it back to the time that you undertook to make the flame colored candle for the boy over in Chicago, weren't you?

A. Yes, sure. Of course, we used other different types, and that was an experiment where we were playing around with a number of different types.

(Testimony of Norbert C. H. Muench.)

Q. Now, we come to taper No. 3, which I understand, Mr. Muench, represents just a progression in the wax buildup on taper No. 2?

A. What you call, I believe, body wax. We call it candle stock.

Q. No. 4 is a continuation of the body wax built up on [253] No. 3, is it not? A. Yes.

Q. What is No. 5, other than a shaping of the candle as you desire it?

A. The base cut-off.

Q. From No. 4? A. Yes.

Q. The base diameter of the candle is approximately what?

A. Between one inch and seven-eights. They vary. They average about 15/16ths diameter.

Q. Roughly an inch?

A. Yes, roughly an inch.

Q. And the taper of No. 2 is about a quarter inch?

A. A quarter to three-eights.

Q. So the bulk of the wax in the candle has been gained by building up on the taper?

A. Yes, sir.

Q. So, therefore, we have the main bulk or body of the candle represented by the wax which has been applied in tapers Nos. 3 and 4?

A. Yes.

Q. As you make these candles, as they go out on the market, they appear as we see them here in No. 5, do they not? [254] A. Yes.

(Testimony of Norbert C. H. Muench.)

Q. The coloring materials are concealed in the candle, are they not? A. Yes, sir.

Q. And the candle would lack its element of surprise if they were not concealed, would it not?

A. Yes. That word "surprise," we never thought of that. We made a candle to drip colors, whether it was this kind or that. There it is concealed inside the body, too, for the same reason (indicating). Let's call it surprise.

Q. Do you use the word "surprise" in your advertising?

A. Let me say this: When you get to the advertising profession, they sometimes can carry a long ways up in the air.

Q. In the course of time over a period of say four or five years the dye applied to taper No. 2 migrates, doesn't it? A. Yes, sir.

Q. And over that period of time it may migrate sufficiently as to show in the body of the candle?

A. Yes, that is true of all aniline dyes, particularly in any kind of candle. We call it bleeding.

Q. That is not the intended condition of the candle as you first put it on the market?

A. No, of any candle. We hope that they burn them [255] right away so we can sell more candles.

Q. As a matter of fact, most of them are burned relatively soon, are they not?

A. Yes, I would say. I would hope so, anyway.

Q. And the distance radially within the candle that the wax will migrate is largely a function of time, isn't it?

(Testimony of Norbert C. H. Muench.)

A. Yes, sir. And the way they are stored. If they are stored in a warmer place the colors will migrate faster than if they are stored in a cool place.

Q. When finished candle No. 5 is burned, the heat developed by the wick flame melts the wax adjacent the flame, does it not?

A. Yes, sir, it melts the candle wax.

Q. And as the candle wax melts the dye which we see on taper No. 2 simply goes into solution in the melted wax, does it not?

A. More or less, yes, sir.

Q. And as the wax accumulates, being colored, the candle tends to crater and spill over, at least to one side, and thus we have the formation of the colored dripping? A. Yes.

Q. Insofar as the dissolution of dye in wax is concerned, that dye will so dissolve in the wax, whether the dye is the distance of the surface of taper No. 2 from its wick, [256] or whether the dye is directly on the wick?

A. Excepting that on the core it dissolves better than in the wick.

Q. But it dissolves in both instances in the wax in essentially the same way?

A. Excepting that in the wick there is part of it that is consumed and burned in the flame.

Q. But insofar as what dissolves in the wax is concerned, in both instances the dye dissolves in the wax in essentially the same way? A. Yes.

Q. That was true of your first Make-a-Rainbow candles, was it not? A. Yes.

(Testimony of Norbert C. H. Muench.)

Q. Incidentally, in the manufacture of that one, of which we do not have now a sample, were the different colored waxes applied directly and at some spaced locations to the wick?

A. Very similar to that, Mr. White, excepting that we placed it directly on the wick.

Q. Was there any spacing in between the dye gobs?

A. The dye applications, we never particularly paid much attention to placing a white spacing between them; we spaced them usually one after the other to get them up close to the tip of the candle.

Q. One final question, Mr. Muench: Is this not true, that in such prior art as Nelson, Fredericks and Funke, the choice of any flame, attempted flame coloring material used, was based upon the metal that the compound or material happened to contain; is that not right?

A. The flame was based upon the metallic salts that were used in the candle? Do I understand your question correctly that way?

Q. Do you recognize a distinction, Mr. Muench, between the metal content of, say, a salt, and the entire salt? To illustrate my point, may I ask you this question? We all know that common table salt is sodium chloride. That is a compound having metallic sodium, to which is chemically bound chlorine. Are we in agreement on that?

A. Well, I never paid particular attention to the use of table salt excepting on my food, but I will take your explanation of how it is made.

(Testimony of Norbert C. H. Muench.)

Q. These people who attempted to color the flame said, did they not, that sodium tended to color a flame yellow? A. Yes.

Q. Now, we all have seen the salt, white sodium chloride; but it is not yellow, it is?

A. Salt is white.

Q. So, therefore, a compound which might tend to give [258] a flame one color doesn't at all necessarily color a wax the same color, does it, or color it at all?

A. Copper acetate would color the flame green, and it forms a green colored wax, too.

Q. But sodium chloride doesn't, does it?

A. No.

Q. Potassium chloride wouldn't?

A. If you get in a lot of those, I will have to plead ignorance, because I haven't studied it from that point. But I imagine there are some that do and some that don't.

Q. Then we are in agreement, are we not, that there are compounds of metals which under certain temperature conditions might give a flame color by reason of the metal, but which as compounds, when dissolved in wax, would not give the wax a corresponding or any color?

A. Some, yes. Others would.

Q. Do you happen to know, Mr. Muench, whether the temperature of the flame in a candle is high enough to liberate the metals contained in the Fredericks, Funke, and Nelson compounds to give a coloring?

(Testimony of Norbert C. H. Muench.)

A. I can't answer that, Mr. White.

Mr. White: That is all. Thank you.

The Court: Redirect?

Mr. Lyon: Yes, sir. [259]

Redirect Examination

Q. (By Mr. Lyon): Mr. Muench, what would be the action of strontium bromate if used in a candle wax?

A. By the action do you mean the color?

Q. Yes, what color wax?

A. May I look it up?

Q. It will take some time for you to look each one of these up. I think you did look them up when you answered the interrogatories for me.

A. I thought I would want to make sure, after Mr. White got through with me.

Strontium bromate here, it gives a yellowish crystal.

Q. How about strontium nitrate?

A. Strontium nitrate is a white power.

Q. How about strontium oxide?

A. It is a grayish-white power.

Q. How about cadmium orange?

A. Cadmium orange would give an orange color, of course.

Q. Cadmium oxide?

Mr. White: What chemical compound is cadmium orange?

Mr. Lyon: Will you look that up for him, please?

The Witness: Cadmium orange, it is used as a

(Testimony of Norbert C. H. Muench.)

pigment here, it is a form of cadmium selenide, which would give an [260] orange. It is used as a pigment.

Q. (By Mr. Lyon): Impure form of cadmium selenide. Okay.

A. Cadmium oxide is yellowish-red or brownish-red. [261]

Q. Referring now to the Fredericks patent, page 2, second column, line——

A. If you want me to look at that, Mr. Lyon, I haven't any copy.

Q. I will read you what I am referring to.

The paragraph reads:

"The color-producing metallic salts I use——"

The Court: Page 2, what?

Mr. Lyon: It is at the bottom of page 2, the right-hand column, line 65.

"The color-producing metallic salts I use in my colored flame candles, are the halides, nitrites, nitrates, acetates, oxysalts, ammoniates, chlorates, perchlorates, alcoholates, oxides and hydroxides and other salts of——"

Then it goes on with a list of a number of minerals.

I ask if that word "other" was taken by you as justifying using salts that were not mentioned in the Nelson and Fredericks patents in preparing your exhibits here.

A. I think it is that word "other salts" that got me in a hassle with Mr. White yesterday. I took that

(Testimony of Norbert C. H. Muench.)

to mean any type or kind of salts that might be available or usable for that purpose.

Q. Now it just so happens that you came out here to California in 1953 and met with me and I believe Mr. White [262] at that time. At that time had you produced for my edification some candles that you thought were made in accordance with the Nelson and Fredericks patents? A. Yes, sir.

Q. I hand you what has been previously identified as Defendants' Exhibit E-3, and ask you if that is one of the 1953 candles that you gave to me.

A. Yes, it is.

Q. How was that candle made and what are its ingredients?

A. That candle was made under the Fredericks patent as I described it previously, and it had the copper acetate, copper chloride and strontium chloride made in accordance with the Fredericks patent.

Q. Now each one of those salts that you have just mentioned, copper acetate, copper chloride and strontium chloride, each one of those is specifically mentioned in the Fredericks patent, is it not?

A. I believe it is.

Q. What is the ply of the wick in Exhibit E-3?

A. This particular one we made with a 21-ply wick, and it was tagged as such.

Mr. Lyon: I will offer this candle in evidence and, with the court's permission, will burn it.

The Court: I do not think I will burn it now. I have [263] an appointment which will take me

(Testimony of Norbert C. H. Muench.)

downtown at 11:30, so I will have to recess a few minutes after 11:00.

How long will it take to burn?

Mr. Lyon: Five minutes.

The Court: Very well.

This is admitted in evidence.

(The exhibit heretofore marked Defendants' Exhibit E-3 for identification was received in evidence.)

The Court: And that has what size wick?

The Witness: A 21-ply wick.

The Court: And the others have a 9-ply wick?

The Witness: These others that were burned had a 9-ply wick.

Q. (By Mr. Lyon): At the same time in 1953 did you manufacture a candle and leave it with me in accordance with the teachings of the Hausamann patent? A. Yes, sir.

Q. I hand you a candle and ask you if that is the candle you are referring to. A. Yes.

The Court: That is H-1, is that right, for identification?

Mr. Lyon: I believe so.

The Witness: That is the candle with the red core. [264]

Q. (By Mr. Lyon): And it also has a 21-ply wick? A. Yes, sir.

Mr. Lyon: I will light that, and I offer it in evidence.

The Court: Admitted.

(Testimony of Norbert C. H. Muench.)

(The exhibit heretofore marked Defendants' Exhibit H-1 for identification was received in evidence.)

Q. (By Mr. Lyon): At the same time did you manufacture a candle according to your understanding of the teachings of the Sterry British patent, using a single dye on the wick?

A. Yes, sir.

Q. Rather than three dyes? A. Yes, sir.

Q. I hand you what has been identified as Exhibit G-2 and ask you if that is that candle.

A. Yes, sir.

Q. And made in accordance with your testimony concerning Exhibit G except that you used a single blue aniline dye on the wick in this case instead of there? A. Yes, sir.

The Court: What is the size of that wick?

The Witness: That is a 21-ply wick.

Mr. Lyon: I believe this is already in evidence but if it is not I now offer it. [265]

The Court: It is admitted.

(The exhibit referred to was received in evidence as Defendants' Exhibit G-2.)

Mr. Lyon: And I will light this candle also.

Q. While we are waiting for the candles to burn, I call your attention to Exhibit Q and ask you if you can predict the order of the drippings in that candle.

A. Yes, I could from the way the color has bled throught the surface of the candle.

Q. Where did we get that candle, do you know?

(Testimony of Norbert C. H. Muench.)

A. Where did we get this particular candle?

Q. Yes.

A. It came from us but I don't know when.

Mr. Lyon: Will you stipulate that that is one of the ones in the box that you gave us at the start of the trial?

Mr. White: Yes.

The Court: That you what?

Mr. Lyon: This is one of our manufacture which the plaintiff bought in the open market and gave us when he was giving us copies of the one that he was burning here in court.

The Court: Very well.

Mr. White: I will stipulate so long as we include in the stipulation when it was bought.

Mr. Lyon: When was it bought? [266]

Mr. White: 1953. I believe Mr. Wilson has testified it was ordered direct from Muench-Kreuzer.

Q. (By Mr. Lyon): Calling your attention again to Exhibit N, is that a portion of the candle part of the body of the candle, of the overall candle? A. Yes.

Mr. White: What portion is "that portion," counsel?

Mr. Lyon: The lower end of the third member from the left in Exhibit N, the bottom of the core on which is painted the mother color.

Q. And the mother color is applied on the body, on a portion of the body of the candle, is that correct? A. Yes.

(Testimony of Norbert C. H. Muench.)

Q. And does the mother color itself become a portion of the body of the candle in the wax?

A. Yes.

Q. As a matter of fact, in Exhibit Q it is pretty well spread throughout the entire body of wax, is that right? A. Yes.

Mr. Lyon: Except for the demonstration of those candles burning, your Honor, I am through with this witness, unless Mr. White has some re-cross.

The Court: I guess not.

Mr. White: Except I do wish to ask him [267] to make a statement for the record as to what these candles do when they burn.

The Court: They are burning now.

This Exhibit G-2, the one on the right, is dripping blue, is that right?

The Witness: Yes, sir.

The Court: And Exhibit E-3, the one made on the pattern of the Hausamann patent——

Mr. Lyon: That is H-1, your Honor.

The Court: That has only red coloring inside?

The Witness: Yes.

The Court: And it is dripping red?

The Witness: Yes.

Mr. Lyon: And E-3 is this one.

The Court: And Exhibit E-3, the Fredericks patent, is now dripping green?

The Witness: Yes.

The Court: I notice that all three of them, that the flame is much larger than the flame on any of

(Testimony of Norbert C. H. Muench.)

the other candles that had a 9-ply wick, all three of these have a 2-ply wick.

I notice also that the flame at the wick as they burn in each one of them is blue.

Mr. White: They are about the same color, your Honor.

The Court: About the same color. [268]

Mr. White: I have two or three questions to ask concerning these exhibits.

The Court: Very well.

Recross Examination

Q. (By Mr. White): Exhibit G-2 corresponds, you say, Mr. Muench, to what patent?

A. The Sterry patent.

Q. You have here a single color applied to the wick? A. Yes, sir.

Q. Does Sterry say anything about designing a candle for dripping qualities?

A. He says nothing about making a candle to drip.

Q. Exhibit H-1 corresponds to the Hausamann patent, am I right? A. Yes, sir.

Q. With a single color throughout?

A. Yes, sir, a red core.

Q. Incidentally exposed at the ends?

A. More or less.

Q. Trademark-wise.

Does Hausamann say anything about making a dripping candle? A. No.

(Testimony of Norbert C. H. Muench.)

Q. Now we come to Exhibit E-3, which is [269] a candle made according to what patent?

A. The Fredericks patent.

Q. You have in the upper section of the wick what? A. Copper acetate.

Q. Next? A. Copper nitrate.

Mr. Lyon: Will you check that?

The Witness: Copper chloride.

Copper chloride.

Q. (By Mr. White): If you selected those two according to the purposes of the Fredericks patent they would produce the same effect, would they not, color the flame according to the characteristic copper color?

A. Yes, with possibly a little variation in the shade.

Q. Now if you were following the teaching of the Fredericks patent to produce coloring of the flame, would you have selected those two salts?

A. I might, but I possibly wouldn't put them in the same relationship to each other.

Q. What is the third salt down at the bottom of this candle? A. Strontium chloride.

Q. What color is strontium chloride?

A. That is supposed to give a reddish hue.]270]

Q. Does strontium chloride produce a red colored wax? A. No, it doesn't..

Q. As a matter of fact, it doesn't color the wax?

A. No, I don't think it does.

Q. Why didn't we burn that first, then?

A. You will remember that I always am very

(Testimony of Norbert C. H. Muench.)

familiar with copper acetate and it was most natural to use. When you walk down the street you walk with your friend, not with a stranger.

Q. The third salt in that candle could just as well have been left out, could it not?

A. Well, remember these are some of the first candles I made, Mr. White, and in any case like that you experiment around. We used that in there to see what it would do. That is one of the candles I brought out at that time.

Q. As a matter of fact, it hasn't been for you an easy thing at all to produce, without the use of aniline dyes, a convincing multi-color drip candle? It has been difficult hasn't it?

A. Well, you know, Mr. White, you could use possibly Georgia red and mud in these candles and color the wax in that way.

Q. But you found it very difficult, have you not?

A. But you wouldn't put that out as a commercial candle, naturally. [271]

Now you are referring, of course, if I may say so, to the fact that all the candle industry has used aniline dyes——

Q. Just a minute. We are going far afield from my question. My question is simply this, you have found it very difficult to show to this court a multi-colored drip candle that hasn't involved the use of aniline dyes that you use in your Make-a-Rainbow candle? It has been difficult, hasn't it?

A. No, it hasn't. We brought out some of these

(Testimony of Norbert C. H. Muench.)

other colors according to my previous testimony that used metallic salts. Naturally you didn't accept them because they were colored. But we use the aniline dyes in our industry, and so does everybody else, because they consume with wax more easily than pigments or the lake colors. But we could use in this kind of a candle a pigment or a lake color, we don't have to use an aniline dye in there, and neither do you.

Q. Using the Fredericks patent, using those compounds specifically mentioned in the Fredericks patent, name them off to me, if you will, the ones that will produce this succession of colors.

The Court: Counsel, I am going to have to recess until 2:00 o'clock.

You will rest with this witness, Mr. Lyon?

Mr. Lyon: I have one question on redirect and then I am through [272]

The Court: We will resume at 2:00 o'clock.

Will you have other witnesses in rebuttal, Mr. White?

Mr. White: Yes, your Honor, but as far as we are concerned we could finish this afternoon.

The Court: Very well. 2:00 o'clock.

(Whereupon, at 11:05 o'clock a.m., a recess was taken until 2:00 o'clock p.m. of the same date.) [273]

The Court: Ex parte?

The Clerk: No, your Honor.

Mr. Lyon: If the court please, Mr. Muench has called my attention to an error that was committed

(Testimony of Norbert C. H. Muench.)

this morning. I would like to ask Mr. Muench, if your records show what ply wick was used in Exhibit G-2.

The Witness: The Sterry patent?

Mr. Lyon: Yes.

The Witness: This candle here has a 30-ply wick; not 21-ply.

The Court: That is a bigger wick?

The Witness: Yes, sir.

The Court: Very well.

Mr. White: I believe we had before us a question in the morning session.

The Court: Yes.

Before we get to that, if I could ask the witness a question.

I understood that it was the size of the wick, largely, which causes the wax to burn and the candle not to drip. Now, the three exhibits there, what are they, E-3, G-2 and H-1—have respectively, a 30-ply wick and 24-ply wick——

The Witness: 21-ply wick [274]

The Court: But all three of them dripped.

The Witness: Yes.

The Court: Now what?

The Witness: The fact is that a wick is a good deal like a pipe. It will draw off the wax faster if it is a larger pipe; or it will draw off the water of a tank faster. Consequently, a 30-ply wick against the other extreme of a 9-ply wick has more capillaries to draw the wax up into the flames.

The Court: But it dripped.

(Testimony of Norbert C. H. Muench.)

The Witness: That is due a good deal to the movement of the air in the room here. And all candles are subject to that. If those candles had a 45-ply wick in them, they would drip. It wouldn't make any difference in regard to whether it had aniline dyes or not. If it had metallic dyes or pigment dyes, which have a tendency to plug up the wick and close up the capillaries, they would have a tendency to drip quicker than with aniline dyes.

The Court: These are not aniline dyes?

The Witness: This is an aniline dye (indicating), this is an aniline dye (indicating); this one here has metallic dyes, copper acetate, copper chloride.

The Court: By "this" we mean——

The Clerk: E-3.

The Witness: These two are aniline dyes (indicating).

The Court: H-1 and G-2 are aniline dyes? [275]

The Witness: Aniline dyes.

The Court: And E-3——

The Witness: Is a metallic dye.

The Court: Now, does the method of construction of the candle, insofar as placing the dyes on the wick, have anything to do with its dripping qualities?

The Witness: No, Especially aniline dyes.

The Court: It does not?

The Witness: It does not.

The Court: Explain your answer.

The Witness: The aniline dyes, of course, are

(Testimony of Norbert C. H. Muench.)

more consumable than metallic dyes, but the dyes, if they are placed directly on the wick, have a tendency, due to the heat, to oxidize somewhat, and it makes them darker. That is the advantage of using a core with the dyes or colored wax painted on the core, it doesn't get so close to the flame, and has a tendency to mix with the wax first, and keeps them from oxidizing. But they will both consume, whether it is on the wick or not, if they are aniline dyes.

The Court: On E-3 the candle was constructed in the method demonstrated by Exhibit N, the board, is that right?

The Witness: No. E-3 is a candle made according to the Fredericks patent. [276]

The Court: Was the dye impregnated in the wick in E-3?

The Witness: On E-3, the Fredericks patent, it teaches to place petrolatum on the wick and then implant these metallic salts on one side of the wick. The reason why they are placed only on one side is so that they don't get all around, and they use the term klinker, so it fuses and closes off the capillarity of the wick.

The Court: In other words, his conception was of a candle that would burn the wax?

The Witness: Burn the wax, yes, so it would not extinguish due to the metallic salts.

The Court: Now on E-3, then, you placed a different color on each side of the wick?

The Witness: That is right.

(Testimony of Norbert C. H. Muench.)

The Court: And no colors in the wax?

The Witness: That is right.

The Court: On H-1 did you put the colors on the wick?

The Witness: The colors dissolved into the wax and the wick is dipped into this colored wax, in this particular case a red colored wax, until a core was formed of approximately one-quarter of an inch in diameter..

After that core was formed it was permitted to harden, then the rest of the candle was made up with white wax.

The Court: Just covered over?

The Witness: Just covered over. [277]

The Court: And G-2, the Sterry candle?

The Witness: The Sterry candle is made by, I used the word ironing, the dye into the wick, and in this particular case it was just blue.

The Court: Just blue?

The Witness: Yes.

The Court: How long ago was that candle made?

The Witness: That candle was made I think in 1953. It may have been '52. It may have been a little earlier than '53.

The Court: And any candle that is that old with any dye in it would be apt to bleed through by this time?

The Witness: Yes, it would.

The Court: Four years later?

The Witness: Yes.

Mr. Lyon: I might say that that has been stand-

(Testimony of Norbert C. H. Muench.)

ing in a candlestick in my office since August 1, 1953.

The Court: Go ahead, counsel.

Recross Examination—(Continued)

Q. (By Mr. White): Mr. Muench, in connection with Exhibit E-3, when it was burned did it burn with anything resembling a distinct azure color flame?

A. The flame you are speaking of now?

Q. Right. [278]

A. You use the word "azure." I think it is more greenish. But that is azure too, isn't it, sort of a greenish-blue?

Q. Yes.

A. Well, it burns with a halo of greenish hue.

Q. Is it sufficiently distinct a color that you would represent to any of your customers that it is a colored flame candle?

A. Well, of course the hydrocarbons——

Q. Will you answer the question yes or no?

A. Will you ask the question again, please?

Q. Was that color distinctly of a hue as either Nelson or Fredericks represented it would be, to a degree that you would represent it——

The Court: To a degree?

Q. (By Mr. White): That you would represent it to any of your customers as a workable flame coloring candle.

A. Well, to a degree I would, Mr. White, because it does have this greenish halo on it.

(Testimony of Norbert C. H. Muench.)

The Court: But you could not say it has a greenish flame?

The Witness: Not entirely, no. The yellow overcomes it.

Q. (By Mr. White): Now the top compound which you put on the wick was [279] what?

A. That was copper acetate.

Q. And the next compound?

A. Copper chloride.

Q. According to Nelson and Fredericks you would get the same flame coloring, if any, from both copper acetate and copper chloride, would you not?

Mr. Lyon: I object. The question has been asked and answered.

The Court: Yes, Sustained.

The Witness: A lighter degree with the chloride possibly.

Q. (By Mr. White): And when we get to the bottom compound, which was what?

A. Strontium chloride.

Q. The flame coloring, if you burned it down, would be what?

A. Well, it is supposed to be a reddish color but I never was able to get it, if that is the answer that you want.

Q. But the wax couldn't possibly be a reddish color, could it?

A. No, because the salts were white. The wax, if it was a different color, though, Mr. White,

(Testimony of Norbert C. H. Muench.)

would be possibly tinted white by the strontium chloride crystals as a contrast. [280]

Q. But not in your candle.

The Court: If he is making a red candle.

The Witness: Yes.

Q. (By Mr. White): But he has not made a red candle, is that not true?

A. Not in this case, no.

Q. Now, Mr. Muench, what compounds selectable from Nelson and Fredericks would you use to get the progression of colors that we see in the second taper in your Exhibit N?

A. Well, I possibly wouldn't get the same colors but I would use some of these that were mentioned here.

Q. Just a moment. I would like to confine our answer exactly to that question. I am going to start with pink.

A. These are aniline colors. You wouldn't get the same degree or shade with metallic salts as you would with these, possibly.

Q. Am I correct in stating that you could not from either Nelson or Fredericks select a compound which would give you the pink that we see here at the top of taper No. 2?

A. I don't know that answer, Mr. White.

Q. We then next come to the purple. Can you tell me what compound you would use?

A. I don't know the answer of any of the salts

(Testimony of Norbert C. H. Muench.)

which would get these particular colors comparable to these aniline colors. [281]

Q. Just a moment. I am not comparing them with aniline colors but those colors.

The Court: That has been your question.

Mr. White: Yes. I beg your pardon. That is correct.

The Court: You asked what salts he would use to get those different colors and he said he didn't know.

Q. (By Mr. White): And that applies throughout the color sequence in the taper?

A. Yes, sir. I made no experiment to a comparison so I can't answer that question.

Q. And even if those colors were obtainable the flame colors resulting would not necessarily be the same, would they?

A. Not necessarily. It might be something else.

Q. Mr. Muench, what do you understand to be the body of that finished candle, No. 5 on the card?

A. The materials? It is made of a composition of stearic acid and paraffine.

Q. No. 1 is an uncolored taper.

A. Yes, made of the same composition.

Q. That is the core, is that right?

A. That is right.

Q. Now what we have added to build 2 to 3 and then to 4 represents the remainder of the white wax that goes into [282] the candle, is that not right?

(Testimony of Norbert C. H. Muench.)

A. Yes, sir. What you I believe call the body wax.

Q. Now which of these waxes to which we have referred do you regard as the body of the candle?

The Court: I do not understand your question, counsel. What is the body candle?

Mr. White: The body of the candle; yes, your Honor.

The Witness: I would say that the body is made up of the entire thing, the wick and the wax, just like a person's body is made of bones, blood and flesh. [283]

Q. (By Mr. White): Is the dye a part of the body of the candle? A. Yes.

Q. Have you read the Wilson patent?

A. Yes, I have read it. Don't ask me to give it, though, verbatim, or by memory.

Q. If we were to regard all the white wax together with the wick as the substance of a white candle, you would call that the body of the candle?

A. Yes.

Q. Is it not correct to say that here, as in Exhibit 2, you have put into the body of the candle a series of wax soluble dyes?

A. Yes. If I want to dye any candle, I would naturally put in the dye whatever I used—may I say, we never call this "body wax" in our company; we call it stock. Now, if you called it stock, it would be different from the wick, but when you call it the body, I would take it it meant the complete setup.

(Testimony of Norbert C. H. Muench.)

Q. Supposing we call the wax from the wick on out stock; would that be a proper term?

A. Yes. Or, if you prefer, candle stock.

Q. Candle stock.

In your candle you have concealed within that candle stock a series of wax soluble dyes? [284]

A. Yes.

Q. That was true with respect to the original Make-a-Rainbow candle, except there the dyes were adjacent the wick?

A. The colored wax was, yes.

Q. And here the only difference, in terms of candle stock versus coloring, is that the dyes have been moved out a ways from the wick approximately one-eighth inch?

A. That is quite obvious, about a quarter of an inch.

Q. Is it not true that our taper, you stated, was about one-quarter inch ~~in diameter~~?

A. A quarter of an inch to three-eighths. It varies a little.

Q. If it were a quarter-inch in diameter, the dyes would have been moved out half of that, or one-eighth inch to the wick?

A. I see what you mean.

Q. Is that correct? A. Yes.

Mr. White: I believe that is all.

Thank you, Mr. Muench.

Mr. Lyon: The defendant rests.

Mr. White: I should like to call Mr. Bechtold.

(Testimony of Ira C. Bechtold.)

IRA C. BECHTOLD

called as a witness in rebuttal by and on behalf of the plaintiff, having been first duly sworn, was examined and testified as follows:

The Clerk: State your name in full, please.

The Witness: Ira C. Bechtold.

The Clerk: Your address, please.

The Witness: 1987 Skyline Vista Drive, La Habra, California.

Direct Examination

Q. (By Mr. White): Mr. Bechtold, what is your profession?

A. I am a consultant in matters of industrial chemistry and chemical engineering.

Q. Will you state to the court your formal education preparatory to your present profession and the activities in the field of chemical engineering which you have engaged in following completion of your formal education?

A. My college education was secured the first year at San Bernardino Valley Junior College; the summer session at UCLA, University of California at Los Angeles; followed by three years at the California Institute of Technology, from which I received the degree of Bachelor of Science with a major in chemistry in June 1930. [286]

My first employment——

Q. May I interrupt, please? What chemistry subjects did you take at Cal Tech?

A. I took all of the chemistry course, which in-

(Testimony of Ira C. Bechtold.)

cluded general chemistry, qualitative analysis, quantitative analysis, physical chemistry, thermodynamics, atomic structure, and the associated mathematical courses which went with those. I took some courses in chemical engineering. I also took some courses in mineralogy and crystallography, which were in the geology school, but nevertheless associated with the chemical course.

Q. Then your industrial experience?

A. I was employed in my first employment by the MacMillan Petroleum Corporation in Long Beach as a research chemist. During this time I was concerned with the refining of petroleum products, involving the removal of, or, rather, the separation of various constituents, such as gasoline, oils, waxes, petrolatum, such things, from natural crude petroleum. I later spent some time in the cement industry.

Q. Excuse me. Did you have any occasion to observe waxes while you were in the petroleum work?

A. Oh, yes, that was one of the common products of petroleum.

Q. Candle wax? A. Yes. [287]

Q. Continue, please.

A. My experience in the cement industry followed the last-mentioned employment. I was employed by the California Portland Cement Company for about six years. During that time I was assigned to the Federal Bureau of Investigation—pardon me—the Bureau of Reclamation, to do work

in connection with Hoover Dam. My services were loaned by my employer.

Later I joined the employ of the Portland Cement Association and was assigned to the National Bureau of Standards as a research associate.

Q. Where?

A. In Washington, D. C. Following this, in about 1941, I came to Los Angeles and joined the Fluor Corporation as a chemical engineer. The Fluor Corporation was engaged in the business of designing many kinds of plants for the petroleum and chemical industries, in practically all fields, handling both organic chemicals and inorganic chemicals, and products and reaction products of those.

I became director of process engineering for that company, which is the position as head of the chemical engineering design function of the company.

Later my responsibilities included direction of the research department, which conducted all of the developmental work of the company. And, also, I was given the assignment [288] of directing the instrumentation department, which was concerned with the control of processes in chemical plants.

In 1952 I set up my own business as an independent consultant, and have conducted that business ever since, and am doing so at the present time.

My work at this time encompasses, in general, most of the fields of my past experience. I am retained by people who are in the same general business as the Fluor Corporation. From time to time

(Testimony of Ira C. Bechtold.)

I am retained on a per diem basis in the oil industry, and many other fields.

Q. Dr. Bechtold, I believe you have——

Mr. Lyon: If you have finished examining the witness with respect to his professional qualifications, could I have a couple of questions on voir dire?

Mr. White: Surely. [289]

Voir Dire Examination

Q. (By Mr. Lyon): Mr. Bechtold, I didn't hear you mention anything about organic chemistry. At Cal Tech did you take any courses in organic chemistry? A. Several.

Q. Which ones?

A. Well, I took what they call elementary organic chemistry. I took organic chem lab, as they call it. I took advanced organic chemistry. I did a research project for inorganic chemistry. I made some materials for Dr. Lucas, who was our professor.

Mr. Lyon: Go ahead.

Direct Examination—(Continued)

Q. (By Mr. White): Is the petroleum industry concerned more with organic chemistry than inorganic chemistry?

A. Well, the petroleum industry is primarily an organic chemical industry.

Q. And Fluor Corporation, its chemical work is predominantly in the field of organic chemistry?

A. That is right.

(Testimony of Ira C. Bechtold.)

The Court: What is the difference between organic and inorganic industries? I did not go to Cal Tech. [290]

Q. (By Mr. White): Mr. Bechtold?

A. May I answer?

The Court: Yes.

The Witness: To the chemist all materials are divided into two general categories, one you might say characterized as the inorganic materials. They are the materials which originate generally from mineral substances, things which come out of the ground in the form of rocks, salts, things which had no association with living matter in any way.

Originally the term "organic chemicals" came because all of the organic chemicals that the early chemists used were derived from things like plants, animals, and therefore they attached the term "organic." They somehow had part of the life processes of living things.

The Court: As, for instance, in so far as rocks are concerned, cement is made from limestone?

The Witness: Right.

The Court: Limestone is a result of life?

The Witness: Right.

The Court: So limestone is an organic rock?

The Witness: No. In the sense of the chemist's definition limestone is inorganic now. It, as you say, may originally come from an animal or plant.

The Court: Or shell? [291]

The Witness: Yes, that is right, in its early days.

(Testimony of Ira C. Bechtold.)

However, if I could continue with the organic maybe I can clarify this.

The Court: Very well.

The Witness: Now the original compounds that were called organic were characterized by principally the presence of carbon and hydrogen and, to a minor degree, things like oxygen.

As chemistry developed the chemist came to make many of these carbon hydrogen combinations synthetically. They therefore continued to bear the name of organic chemicals.

Today there are many more man-made organic chemicals than there are originating from plants and animals. The list of organic chemicals grows by the hundreds every year.

The Court: You say that the oil industry is primarily concerned with organic chemistry?

The Witness: Right.

The Court: Because oil is the result of—what do you call those little things in the sea?

The Witness: Diatoms.

The Court: Yes.

The Witness: That is one explanation; yes, sir.

There are many theories as to the origin of oil. In fact, there may be various origins. However, they all relate to the idea that oil is a residue, kind of a condensed liquid [292] of organic bodies, that is, living organisms.

The old theory assumed that some fishes or something of that kind were laid down in large quantities and eventually reduced to this uniform oil.

(Testimony of Ira C. Bechtold.)

There is another theory which, as you indicated, says they came from a living cell called the diatom which, incidentally, has an inorganic shell, the ones we find today.

The Court: They are found in the sea water?

The Witness: That is right.

Another theory says that oil originates due to the action of certain bacteria. That is a recent idea which is getting lots of attention today.

Again bacteria is living things.

The Court: Then in a word the difference between organic and inorganic chemistry is that in inorganic chemistry you deal with dead things and in organic you deal with either living things or the result of living things?

The Witness: I think that is a reasonable definition.

Q. (By Mr. White): In the field of chemistry, Mr. Bechtold, what generally is meant by the term chemical compound?

A. The definition of a chemical compound is briefly a combination of chemical elements in relationship such as is dictated by the so-called valence or combining tendencies of these elements. [293]

The elements are approximately 92 in number.

The Court: Why do you say "approximately"? Did somebody discover a new one?

The Witness: Yes. With the advent of atomic energy it is possible to make transitory elements that last only a short time. They are either on the

(Testimony of Ira C. Bechtold.)

end of the table or in between other elements. So you can't say that there are only 92 any more.

Q. (By Mr. White): Are metals elements?

A. Yes.

Q. Do metals retain always their elemental properties when they enter into chemical combinations? A. No.

Q. Apropos the matter of chemical compounds as we are concerned with them, and referring to the Fredericks patent, page 2, column 2, starting at line 65, reference is made to color-producing metallic salts.

What are metallic salts?

A. Metallic salts are formed from the combination of a metal with another element which is a non-metal.

Another definition of a salt is a compound derived from combining a base, which is the metal-bearing substance, and an acid, which is the non-metal-bearing substance.

A metallic salt always contains a metal, which is called [294] a cation. The non-metal substance or element is called the anion.

Q. What are oxides?

A. Oxides are a combination of an element with oxygen.

Q. What are hydroxides?

A. Hydroxides are the bases I referred to. They are a combination of a metal with oxygen and hydrogen.

Q. Fredericks groups all of such things as hal-

(Testimony of Ira C. Bechtold.)

ides, nitrates, nitrites, acitates, oxysalts, ammoniates, chlorates, perchlorates, alcoholates, oxides and hydroxides, he characterizes those as being salts, does he not? A. Yes.

The Court: Metallic salts?

Mr. White: Metallic salts. That is right, your Honor.

The Court: Everything that he mentions there is metallic, is it not? Are there salts of sodium? Is that a salt?

Mr. White: I am coming now to what the witness has referred to as the halides, nitrates, and so forth. Those are what you have referred to as the anions.

The Witness: That is right. [295]

Q. (By Mr. White): Now, I am coming to the cations and anions, sodium, potassium, lithium, boron, thorium, strontium, iron, copper, calcium, borium, cerium, and also powdered aluminum and magnesium. The latter are not compounds, are they?

A. No, sir; those are elements.

The Court: All these other in the previous paragraph are compounds, is that right? Halides—what is that?

The Witness: Halides is a group of compounds, a chloride, a fluoride, a bromide, they are all halides. The word "halide" is a chemist's term for the group including chlorine, bromine, fluorine. Those are known as halogens. And that is because they appear as elements with similar characteristics.

The Court: They are metals, are they?

(Testimony of Ira C. Bechtold.)

The Witness: No, sir. They are anions. They are the opposite of metals.

Q. (By Mr. White): Mr. Bechtold, if we had isolated and by themselves these metallic cations, sodium, potassium, lithium, et cetera, under what circumstances would they produce a color?

The Court: What is the first part of your question?

(The question was read by the reporter.)

Mr. White: What I mean is a coloring of a flame.

The Witness: Do you mean if we had these as elements? [296]

Mr. White: Right.

The Witness: If you were to introduce at least some of these elements as the element into a flame, and the flame is at a high enough temperature, they would color the flame with a characteristic color, which is due to the nature of the metal. Some of these would be hard to get to a high enough temperature. Iron, for example, you have to raise it to a very high temperature before you get its characteristic color.

The Court: Would you be apt to get enough heat out of the flame of any one of these candles here to produce a color, from any one of those mentioned?

The Witness: Not substantially. You might with sodium, for example.

Q. (By Mr. White): If sodium were isolated?

A. By itself.

(Testimony of Ira C. Bechtold.)

The Court: That would give you a little bluish——

The Witness: Sodium would be yellow.

The Court: Yellow:

The Witness: Yes.

Q. (By Mr. White): Is it more or less difficult to produce any flame coloring from these metals when they are chemically combined as halides, nitrites, nitrates, et cetera?

A. That would depend on the combination. It would be more difficult to make any metal which is already existent as an oxide or a hydroxide produce a color, because it is, in [297] effect, already burned, it is already an oxide, it has been oxidized. Therefore, it is difficult to make it part with its existent oxygen and do it all over again. However, if it was in the nature of a halide, for example, the sodium or potassium or lithium halides tend to be more volatile to heat, and therefore they will get up into the flame easier than some of the others.

The Court: That is to say they have a lower burning temperature, is that right, burning point. How do you express it?

The Witness: I expressed it as being more volatile. They are a compound of the salt that has, we will say, a little more vapor pressure. It wants to go up with heat, so it tends to rise to the flame a little better.

I would like to say this is a rather narrow distinction. None of these things are easily burned in flames.

(Testimony of Ira C. Bechtold.)

The Court: Such as you would secure from an ordinary wax?

The Witness: That's right.

The Court: Ordinary candle?

The Witness: That is right. The chemists use this effect of colored flame to make tests in the laboratory to determine what metals are present. There is a standard procedure over many, many years.

When the chemist does this, he uses a much hotter flame. [298] He uses a Bunsen burner flame, for example, which is very much hotter than a candle flame.

The Court: It produces what degree of heat?

The Witness: I don't know what the temperature is of a Bunsen flame. However, it is very much hotter than a candle flame. A chemist uses a platinum wire, which won't burn at all. He doesn't want it to burn. He dips it in a solution of the salt that he wants to test and holds it in the Bunsen flame, and when the wire gets hot enough there will be a flame of the color of the metal in the salt.

The Court: That is the way he determines what the metal is?

The Witness: That is right. And that pertains to certain of the metals which give characteristic flame colors. There are many metals which do not give characteristic flame colors, and the chemist cannot use this simple test to identify those.

Mr. White: I was so interested in that description, I have forgotten my question.

(Testimony of Ira C. Bechtold.)

Q. (By Mr. White): Mr. Bechtold, you have read the professions in the Funke, Nelson and Fredericks patents as to the flame coloring attributes of the candles described therein? A. Yes, I have.

Q. Has it been your observation during your presence [299] here at the trial that any candles burned during the course of this proceeding, and containing any metallic compounds spoken of by Nelson, Fredericks or Funke, operatively color the flames as the patentees describe that they will be colored?

A. No.

Q. Do you have any means for demonstrating to the court the difference between the flame coloring, of which a metallic cation or metallic element by itself is capable, as against the color of that metal in chemical combinations?

The Court: Well, if he answers that question, you have lost me. Maybe if the reporter reads it over again I can understand it.

(The question was read by the reporter.)

The Court: Can you answer it?

The Witness: Shall I answer it?

The Court: Yes.

The Witness: Yes. Let us take an example. The salt strontium chloride, that I believe is the first one mentioned by Nelson in column 1, line 44 and line 45, strontium chloride is a simple two-element salt, it is composed of the element strontium, which is the metal, and chlorine, which is the non-metal. It is not unlike ordinary table salt in that respect.

(Testimony of Ira C. Bechtold.)

That is, sodium chloride. It looks like ordinary table salt. It is white.

The Court: Is table salt a metal? [300]

The Witness: Yes, sir. The sodium is a metal. It is a metallic salt.

Strontium as an element happens to be one of the metals which has a nice characteristic flame color. Strontium gives a somewhat reddish or scarlet, the tables used by the chemists say, flame. You take strontium chloride, dissolve it in a little water, dip a platinum loop in it, as the chemists say, hold it in a flame of high enough temperature, such as Bunsen flame, it will color the flame red. This is due to the metal being volatilized from the salt and going into the flame and producing this characteristic color, because of what we call excitation of the atom of the metal. The chloride portion of the salt has no bearing on this color.

Any other anion would give the same color as strontium in the flame. However, in the salt itself, this metal imparts no color. Salt is white. As a matter of fact, the pure crystal of the salt would be colorless, you could see through it like glass. The reason it is white when you buy it in a bottle is that the crystals have been crushed and broken and you get surfaces which are white. So the fact that the excited metal in the flame makes a red color is the reason for coloring the flame. When it is combined with the chloride in the salt it is not in this excited state, so it colors nothing. It gives it a colorless or a white color.

(Testimony of Ira C. Bechtold.)

Q. Can you identify these wax bodies which I hand to you for the court? [301]

The Court: Are those marked for identification, Mr. White?

Mr. White: I was just about to suggest that. We have quite a number of these, your Honor. If there was some way of consolidating them as exhibits it would perhaps be more convenient.

The Court: We will have the afternoon recess and you can get together with the clerk and figure out some way to mark each one of these. I see a whole bunch of them on the table.

Mr. White: Yes. Thank you.

The Court: We will have our afternoon recess.

(Short recess.)

The Court: Did you get them all marked?

The Clerk: Yes, your Honor.

The Court: Those are numbers what?

The Clerk: Nos. 18-A to 18-L both inclusive.

(The exhibits referred to were marked Plaintiff's Exhibits Nos. 18-A to 18-L inclusive for identification.)

The Court: Those are what? What do you call them?

The Witness: We call them pats, p-a-t-s.

Q. (By Mr. White): Mr. Bechtold, I hand you Exhibits 18-A and 18-B and will ask you to describe them to the court.

A. These exhibits are pats of candle wax prepared by [302] myself and Mr. Wilson in his plant in San Gabriel on February 14, 1956.

(Testimony of Ira C. Bechtold.)

Exhibit 18-A is one which was prepared from a candle wax consisting of paraffine and stearic acid, such as I understand is normally used in the body of candles, and mixed therein was the salt strontium nitrate.

Exhibit 18-B is exactly similar except that mixed therein is the salt strontium chloride.

Q. Does either of the pats have a color noticeably different from that of ordinary white candle wax? A. No.

Q. According to Nelson and Fredericks what color does strontium give to a flame?

A. A red or scarlet color.

The Court: Let me see. Do you have the Nelson patent in front of you?

The Witness: Yes.

The Court: Page 1, beginning at line 42 he cites a few examples.

"To cite a few examples of a great variety of salts which can be used in connection with the present invention, strontium salts * * * give a scarlet flame; barium salts give a green flame; potassium salts produce a violet flame; copper halides give an azure flame; zinc salts produce a [303] white flame; selenium salts produce a light blue flame; calcium salts produce a brick-red flame; sodium salts produce a bright yellow flame of a more definite and intent yellow than an ordinary flame."

Is that correct? I do not mean in a candle but if these salts are applied to this aluminum stick that you talked about and heat it with a sufficient degree

(Testimony of Ira C. Bechtold.)

of intensity, would these materials produce the color of flame which this patent says they will?

The Witness: With the exception of selenium, yes.

The Court: Selenium would produce what, nothing?

The Witness: Selenium is not a metal. Selenium in a salt acts as an ani · therefore you would have to have another elem of metal in combination. You would therefore get the color of the metal in the flame rather than the selenium.

The Court: So selenium, except for the statement selenium salts produce bright blue flame, the other statements in that paragraph are correct except they will not do it in candles?

The Witness: Right. [304]

The Court: What, Mr. White, is the purpose of all these exhibits?

Mr. White: To show the lack of relationship between the classes of chemical compounds referred to by Nelson for the purpose of flame coloring, as against the defendant's purposes here of wax coloring.

Our purpose here is to prove that there is necessarily no correspondence whatever between them.

The Court: Between these materials which are said to produce a particular color of a flame, and the same materials painted in the candle to produce a colored wax when the candle burns?

Mr. White: That is right.

Now, it happens, and defendant has taken full ad-

(Testimony of Ira C. Bechtold.)

vantage of it, that the color that copper is supposed to produce in its flame is similar to the color of at least some of its salts, and notably copper acetate, of which we have heard so much.

Mr. Lyon: I think, Mr. White, if you make a statement of what it is you intend to prove, I will stipulate to it.

The Court: I asked you that because it seemed to me that from the position taken by defendant's counsel and Mr. Muench on the witness stand, he says that these materials introduced into a candle won't produce these colored flames. You get a little, what he calls a halo, once in a while, like [305] I could see in some of these burning, what I would call a little spit color.

Mr. Lyon: If what you are trying to prove is there is no necessary correspondence between a color which a given metallic salt will color a wax, and the color, if any, of a flame of that salt when burned, I will stipulate to it.

Mr. White: Now we are getting salts and metals mixed up.

Will it be stipulated that—I would like to have for the record a demonstration of this, your Honor, and I will endeavor to proceed just as rapidly as possible.

The Court: Each one of them, are you going to burn them?

Mr. White: No, they will not be burned. All that these pats represent, your Honor, are compounds of

(Testimony of Ira C. Bechtold.)

metals in the classes referred to by Nelson mixed with wax.

The Court: You want to demonstrate by that that they do not color the wax?

Mr. White: That is right. And since the defendant has asserted that it is following the teachings of Nelson and Fredericks, I want to prove with unmistakeable clarity that what is said about the flame color producing properties of the metal is no teaching of what compounds of that metal will color a wax.

Mr. Lyon: I will stipulate to it. [306]

The Court: I would suggest to counsel this: I have been reading the Nelson patent and the Fredericks patent, and I don't know what position counsel is going to take for the defendant, but in reading them against the plaintiff's patent, and the way plaintiff introduces his material, the Nelson patent says either in the body or in the wick. If that constitutes a sufficient disclosure in the Nelson patent and in the Fredericks patent, it says the metallic salts may also be applied to the vehicle-bearing wick as a saturated or as an unsaturated salt, and in column 2, page 1, each paragraph there he mentions coloring the wick, it seems to me that that would be the thing that would constitute the anticipation, if any.

I have been trying to follow the testimony concerning all of these salts, and so on and so forth. I may be wrong. I don't wish to have you feel that you are foreclosed. But it seems to me that the nub

(Testimony of Ira C. Bechtold.)

of this coconut here is introducing the color in the wick, and not whether it is selenium salts or some other kind of a salt, or aniline dye, or anything else.

Mr. White: No, I don't believe, your Honor, if I may take exception——

The Court: You certainly may. I invite it.

Mr. White: The point here is what teaching do we find in Nelson or Fredericks of coloring the candle drippings. [307]

These compounds are referred to as flame coloring compounds, your Honor.

The Court: And your position is that they won't color the drippings?

Mr. White: We have examples here where they would be as ineffective as so much table salt to color the wax.

The Court: But maybe they will color the drippings.

Mr. White: No. If they will not color the wax on being mixed therewith, they will not color the drippings.

The Court: In other words, in order to introduce, to make these pats, you had to heat the wax?

Mr. White: That's right. These were made by putting the chemical compounds in the hot wax, and if the color doesn't show here, it will not show in the candle.

The Court: The hot wax being melted wax?

Mr. White: Yes.

The Court: And at least as hot as the flame of a candle?

(Testimony of Ira C. Bechtold.)

Mr. White: That is right.

Hot wax is hot wax from whatever source it comes.

The Court: I imagine some wax can get hotter at times than other. I don't know. Can it?

The Witness: Yes.

Q. (By Mr. White): But would it affect the color of the mixture of the wax with the chemical compound? [308] A. No.

The Court: Let me see, now. Your position is, and what you now propose to prove, is taking the materials—I don't want to fall into calling them a salt or something else, because I don't know that—but taking the materials that are mentioned in the Nelson patent——

Mr. White: Right.

The Court: ——and in the Fredericks patent——

Mr. White: Right.

The Court: ——and introducing them into a candle, does not produce a colored wax?

Mr. White: With only comparatively rare exceptions.

Your Honor will recall my interrogatory in which I listed from Nelson and Fredericks 146 materials, and I have Mr. Muench's answer "out of which of those 146 can you point to as being candle coloring, candle wax coloring materials?"—and I got 10 out of 146.

Mr. Lyon: I might point out in the argument you presented to the Board of Appeals, you didn't say that most metallic salts will not color the drip-

(Testimony of Ira C. Bechtold.)

pings of the wax; you said metallic salts will not color the drippings of the wax. And you have just admitted that 10 of them will.

Mr. White: I can give you 145 more that won't. The point is just this—I think this is quite significant: These patents do not teach wax coloring. They simply do not. They [309] talk about flame coloring. And you can't use flame coloring directions for wax coloring.

You notice, your Honor, that the defendant did not undertake to furnish you with a candle made according to the specific examples in either Nelson or Fredericks.

Mr. Lyon: Now, Mr. White, I take complete exception to that. Exhibit E-3 contains absolutely nothing in the candle except materials specifically listed in the Fredericks patent.

Mr. White: All right. E-3 contains—I am talking about the examples, counsel. When a man goes to the Patent Office, applies for a patent, he gives as an example of his invention a specific description of it, it is getting to the point now where the Patent Office requires that with great stringency. Now, certainly, if any part of that patent is going to be operative, it is going to be the specific example that he sets forth. Now, referring to Nelson we find——

The Court: His example is on page 2, the first column, or is his example on page 2, the second column?

Mr. White: He has two. Starting in column 2,

(Testimony of Ira C. Bechtold.)

line 84, and continuing through line 94, that is a strontium nitrate.

The Court: Where? I don't find any line 94 or 84. There are 75 lines there.

Mr. White: Column 2 of Nelson, your Honor.

The Court: I was looking at the Fredericks patent. I [310] see.

Mr. White: There is an example of a candle made——

The Court: Specific example?

Mr. White: Specific example. And you can make and burn that candle and it will be just as white as if it didn't have any so-called coloring material in it. [311]

The next one, which is a mixture of strontium salts——

The Court: All right, counsel. Go ahead with your proof.

Mr. White: I think that there is merit in having actual solutions of these compounds that are said to have the coloring properties.

The Court: Very well, counsel. Go ahead.

Q. (By Mr. White): I now hand you, Mr. Bechtold, Exhibits 18-C, 18-D and 18-E——

The Court: Let me see, 18-A is the strontium nitrate?

Mr. White: Right.

The Court: Which is mentioned in column 2, between lines 85 and 90 of the Nelson patent on page 1.

(Testimony of Ira C. Bechtold.)

And Exhibit 18-B is not mentioned, is it, strontium chloride, in the Nelson patent?

Mr. White: Only over under salts, your Honor.

The Court: That is with strontium salts?

Mr. White: Right.

The Court: Very well.

Now you have 18-C, is that right?

The Witness: I have 18-C, your Honor.

Q. (By Mr. White): Will you state briefly what 18-C, D and E is, please? [312]

A. 18-C is a pat of wax containing barium nitrate. 18-D is a similar pat of wax containing barium chloride. 18-E is a similar pat containing barium oxide.

Q. These are pats uncolored by the barium salts?

A. That is right.

The Court: Where are those mentioned in the Nelson patent or the Fredericks patent?

Mr. White: In the Nelson patent, your Honor, column 1, he makes reference to barium salts at line 46.

The Court: Yes. I see.

Q. (By Mr. White): Now barium as a metal is stated by Nelson to give what kind of a flame?

A. Green.

Q. I now hand you for your description 18-F, G and H.

A. 18-F is a pat of wax containing copper chloride.

18-G is a pat of wax containing copper acetate, and I specify cupric acitate.

(Testimony of Ira C. Bechtold.)

18-H is a pat of wax containing copper nitrate.

Q. There are differences in the colors of those three samples or pats, are there not?

A. Yes.

The Court: 18-F, that has copper chloride, and what color is that, blue or green?

The Witness: I would call it a bluish green.

The Court: Very slightly colored.

The Witness: Yes.

The Court: 18-H, that is the copper acetate, cuprie acid?

The Witness: Copper nitrate, I believe.

The Court: 18-G is copper acetate, and that is a deeper green.

The Witness: Yes.

The Court: And 18-H has a very slight green.

The Witness: That is right.

Mr. White: Here we have a sample of a single salt which is zinc chloride.

The Court: You haven't come to zinc yet, have you?

Mr. White: No, but that is the next one in order mentioned by Nelson.

This sample that we have happens to be marked poison on the bottle.

The Court: Is it poison?

Mr. White: Not to look at, your Honor.

Q. Mr. Bechtold, what is the color of that salt?

A. White.

Q. What is the color of wax, would it color a wax any differently than its own color?

(Testimony of Ira C. Bechtold.)

A. No.

Q. Mr. Nelson in his patent refers next to [314] selenium salts——

The Court: After zinc?

Mr. White: After zinc.

Q. Can you tell us about the applicability of selenium salts for practical wax coloring?

A. As I stated previously, selenium is an element, not a metal. It is like the element sulphur. It is intermediate between the metals and the non-metals. Therefore, if you attempt to make a salt in which you use the selenium as the metal it is difficult to form and is unstable.

Such combinations as selenium chloride, which might be comparable in this case to strontium chloride, or sodium chloride, is, I believe, as a liquid and a rather hazardous liquid, a volatile, smelly liquid. In fact, selenium is highly poisonous. When burned it makes an odor a little like sulphus burning, but much more poisonous than sulphur. Advice given constantly to those handling selenium is not to breathe the vapors.

Q. You would not recommend its use in a candle then? A. I would not.

Mr. Lyon: While you are on selenium, isn't it a fact that it is used to make red glass?

The Witness: Red glass?

Mr. Lyon: Yes, that is right.

The Witness: I don't know. [315]

Q. (By Mr. Lyon): I now show you Exhibits 18-I and 18-J. What are they, Mr. Bechtold?

(Testimony of Ira C. Bechtold.)

A. Exhibit 18-I is a pat of candle wax in which has been mixed calcium nitrate.

Exhibit 18-J is a similar pat of wax in which has been mixed calcium acetate.

Q. In each instance the wax is uncolored, is that right? A. That is right.

Q. What, according to Mr. Nelson, what flame color are these capable of producing?

A. Brick red.

Q. I now hand you Exhibits 18-K and 18-L. What are these, Mr. Bechtold?

A. Exhibit 18-K is a pat of candle wax in which has been mixed sodium nitrite, n-i-t-r-i-t-e.

Exhibit 18-L is a similar pat in which has been mixed sodium acetate.

Q. These wax pats are white in color?

A. That is right.

Q. What does Mr. Nelson say about the color of the flame that they would be used to produce?

A. He says it will produce a bright yellow flame.

The Court: The long and short of it, then, [316] is that in connection with all of these patents, Exhibits 18-A to 18-L, you have introduced all of the materials mentioned in this column 1 at the bottom of page 1 and column 2 in the Nelson patent except selenium salts and zinc salts, and none of them are colored except the one with copper and that has some green?

Mr. White: That is right.

Mr. Lyon: That isn't quite true. There is quite a few strontium salts in there.

(Testimony of Ira C. Bechtold.)

Mr. White: We have not attempted to introduce all of the strontium salts known or the barium or the copper or selenium or all the sodium salts. There are a great many salts of many of the metals. We have produced some ordinary ones and some of those specifically named here. And these I think may be regarded as typical also of Fredericks because I should like to call your Honor's attention to page 2, column 1, of the Fredericks patent in which there is given the three color types which we discussed at some length yesterday.

You will recall that the first type contained strontium chloride, which is white. We have a sample of that here. Certainly no one would use example 1 to produce a colored wax candle. The defendant didn't do so.

Second, we have cupric chloride, strontium chloride and sodium chloride.

Now from the pats you have seen the cupric [317] chloride is a weak green color. The defendant much prefers copper acetate.

Then Fredericks proposes to use strontium chloride and sodium chloride, neither of which by any possibility could color the wax.

The Court: He says cupric chloride crystals in his third and in his second, and if I understand that correctly that is Exhibit 18-G, which is green.

Mr. Lyon: That is one of the salts also that we used in Exhibit E-3.

Mr. White: Exhibit 18-G, your Honor, was copper acetate.

(Testimony of Ira C. Bechtold.)

The Court: And the witness said cupric acid.

The Witness: Cupric acetate.

Mr. White: But in Fredericks' examples, in the second example—as a matter of fact, in the two examples described as the alternate color type and the mixed color, he uses cupric chloride, and here is cupric chloride, 18-F.

The Court: That is copper chloride. Is that the same thing?

The Witness: Yes, sir.

Mr. White: Now the reason that exemplars of these specific examples is not produced is that if they were made they could not conceivably produce a succession of different colored wax drippings, these specific examples, because we have seen here—— [318]

The Court: Are you arguing your case now?

Mr. White: I am afraid I am, your Honor.

The Court: All right.

Q. (By Mr. White): Mr. Bechtold, you have studied——

The Court: You are now going to another subject?

Mr. White: Not really. I am still talking about the colors.

The Court: What I was going to say, I have counsel waiting in chambers on another matter where they have to get a brief filed today in a prohibition proceeding against me, so I will have to take a recess until tomorrow morning at 10:00 o'clock.

(Testimony of Ira C. Bechtold.)

I am sorry to have to interrupt the trial so much but I just cannot help it.

Mr. White: Would it be possible, your Honor, for me to have, say, five minutes more with Mr. Bechtold? I say that for this reason, that he is committed for tomorrow.

The Court: Do you expect to finish with him in five minutes?

Mr. White: With Mr. Bechtold, yes. Mr. Bechtold has commitments with clients for tomorrow that makes him unavailable to me.

The Court: How long will you be on cross examination?

Mr. Lyon: I have some cross examination of this witness. [319]

The Court: You do have cross examination?

Mr. Lyon: Yes.

The Court: How long do you think that will take?

Mr. Lyon: It all depends on what answers I get. It shouldn't take more than 10 to 15 minutes, if that long.

The Court: Suppose we have a recess and then I will come back out here and we will try to finish with Mr. Bechtold this evening.

Mr. White: I appreciate that, your Honor.

(Short recess.) [320]

Q. (By Mr. White): Mr. Bechtold, have you studied all the patents listed in Plaintiff's Interrogatory No. 15?

(Testimony of Ira C. Bechtold.)

The Court: That is, all these in the book of prior art?

Mr. White: Yes.

The Witness: Yes.

Q. (By Mr. White): Mr. Beachtold, do you find any of these patents a teaching of a candle containing a succession of different coloring materials which as the candle progressively burns will form successively different colored wax drippings

A. No.

Q. What would you do, Mr. Beehtold, in the selection of salts in accordance with them to accomplish the purposes of the Nelson and Fredericks patents?

A. Both Nelson and Fredericks state as their objective the production of candles which will exhibit colored flames upon burning. Therefore, I would select salts containing metallic elements which would color flame to whatever color I desired. I would, therefore, select salts having the proper metallic element present, and would carry out the impregnation of the wick, and in some instances the wax surrounding the wick with these salts.

The Court: If you did that and put it in the candle, would you get a colored flame? [321]

The Witness: No.

Q. (By Mr. White): Mr. Bechtold, I show you Defendant's Exhibit N and ask you if according to the teachings of the Nelson or Fredericks patents to you as a chemist you would be able to produce a

(Testimony of Ira C. Bechtold.)

similar number of different colors from what is taught in those patents, wax colors?

A. No.

Q. Have you studied the Wilson patent in suit?

A. Yes.

Q. Mr. Bechtold, will you compare for us briefly the disclosure in the Wilson patent with respect to the prior art which I identify as being listed in interrogatory 15?

A. Wilson has as his objective the production of a candle which will form multicolored drippings in succession as the candle burns. In other words, it is his object to have a candle containing within it materials which upon the burning of the candle will mix with the wax, flow outward to the rim of the candle and rip over the edge. Upon freeing or solidifying there will be a succession of different colored drippings.

Now, by comparison, Nelson and Fredericks have an entirely different objective. It is their desire to produce candles having distinctive colored flames. Both of these patents make reference to including in the candle materials which will impart to the flame a characteristic color of that [322] material. However, these patents make no reference to producing drippings of any color. They do not state that as an objective. They do not say that they do at any time. [323]

Q. Would one be guided by anything said by Fredericks or Nelson toward the production of a

(Testimony of Ira C. Bechtold.)

candle which would perform like the candle described in the Wilson patent? A. No.

Q. Referring to the list of compounds in the answer to interrogatory 18, Mr. Bechtold, do you find in either Nelson or Fredericks any reference to a barium chromate or other chromates?

A. Would you state that question again, please?

Q. Do you find in Fredericks or in Nelson any reference to a chromate as a coloring material?

A. Please identify the interrogatory number.

Q. No. 18. A. Yes.

Q. I am referring to the list of chemicals.

A. In the answer?

Q. Right.

A. I do not find any reference to barium chromate in the Nelson or Fredericks patents.

Q. Do you find referred to in either any material similar chemically to sodium silicate and aluminum which produces, according to the interrogatory answer, ultramarine blue? A. No.

Q. Do you find any reference to uranium dioxide or any [324] other uranium compound?

A. No.

Q. Do you find reference to any metallic stearate? A. No.

Q. Do you find reference to any benzine sulfonate of sodium or of any other metal? A. No.

Q. Do you find any reference to ferric ammonium sulfate?

The Court: Or any other metal in Fredericks?

Mr. White: Yes, a benzene sulfonate of sodium

(Testimony of Ira C. Bechtold.)

or any other metal. That is to say, a benzene sulfonate of any metal.

The Court: All right. I understand you now.

Q. (By Mr. White): Do you find reference to ferric ammonium sulfate? A. No.

Q. Do you find reference to ferric hydroxide in combination with oil? A. No.

Q. Do you find reference to any ferrocyanide salt in the category of prussian blue or iron blue or Chinese blue? A. No.

Mr. White: That is all.

The Court: Cross examine. [325]

Cross Examination

Q. (By Mr. Lyon): Mr. Bechtold, are you familiar with the publication known as The Condensed Chemical Dictionary, Fourth Edition, Reinhold, that I hold in my hand? A. May I see it.

Q. (Exhibiting volume to witness.)

A. Yes.

Q. I am going to read a statement from page 589 and ask you if you agree or disagree with it:

"Selenium. Se. A non-metallic element, atomic number 34, in Group VI of the periodic table. It is similar to sulfur and occurs with it in sulfide ores as well as in certain soils.

"Properties: Steel-gray, non-metallic rods or buttons; very high luster; crystalline surface on being broken. Also occurs in the form of dark red crystals or power; soluble in carbon disulfide, concentrated sulfuric acid; insoluble in water and alcohol.

(Testimony of Ira C. Bechtold.)

Selenium burns in air with a bluish-red flame, forming selenium dioxide."

Then skipping some unimportant matter.

"Uses: The allotropic, red powder form is [326] used in microscopy as an imbedding material. Selenium is used in the glass industry for making red glass; * * *"

Would you disagree with that? A. No.

Q. Now, Mr. Bechtold, referring to the Fredericks patent, page 2, column 1, lines 64 and following, where those chemicals are listed, do you find that the metal copper is listed, and do you find that the salts, acetates, and sulfates are listed?

A. Would you state the question again, please?

Q. I said, you find listed there the metal copper and among the suggested salts are acetates and sulfates, is not that correct? A. No.

Q. Did I say sulfates?

The Court: You said sulfates.

Q. (By Mr. Lyon): Do you find acetates listed?

A. Yes. [327]

Q. You find nitrates? A. Yes.

Q. You find oxides? A. Yes.

Q. All right. Then if a person took, following the remaining teachings of the Fredericks patent, took copper acetate, and applied it to the wick of a candle, then he applied some ferric oxide to the wick of a candle, and then he applied some copper oxide to the wick of a candle, he would be using materials specifically listed in the Fredericks patent, would he not? A. Yes.

(Testimony of Ira C. Bechtold.)

Q. If he lit that candle, if he lit the wick of that candle, he would then obtain a candle, if it dripped, which would drip successively green, red, and blue, would he not? A. No.

Mr. White: I am sorry, counsel. I didn't get the succession of the chemicals there.

Q. (By Mr. Lyon): We will put them in this order: Copper acetate, which we have shown here will drip green; and we will take prussian red, ferric oxide; and then we will take copper oxide—that is a red, we had better take a copper hydroxide; so that we would go from green, to red, to blue, is that not a fact? A. No. [328]

Q. Why wouldn't copper acetate, for instance, give you a green dripping?

A. It would depend on how much of it you used.

Q. Well, if you used enough you would get a green dripping, couldn't you?

A. You asked me if we followed the teachings of the patent—right?

The Court: No. He first asked you if those metals are mentioned in Fredericks, if I understood.

Mr. Lyon: Yes. It is obvious that they are mentioned.

The Witness: Yes.

The Court: Then he said if you put those in a wick.

The Witness: Now, on page 1, column 2 line 38: "The amount of color-producing metallic salts applied to the wick may vary from a trace"——

(Testimony of Ira C. Bechtold.)

I emphasize the word "trace."

"——up to an amount sufficient to produce the intensity of color desired."

I interpret that as meaning the intensity desired in the flame. To me as a chemisst a trace is an unmeasureable amount. Chemists refer to traces when they make analyses as things which they are not able to measure, but they detect things which they are not able to measure, but they detect they are there.

As a matter of fact, in coloring flames, it is better to use small amounts than large amounts. Traces will color [329] intensely, where sometimes large amounts will extinguish the flame. Therefore, if I were to follow Fredericks to produce a colored flame candle, I would use small amounts, which might not color the drippings.

Q. (By Mr. Lyon): We understand your position, but now——

The Court: But if you used more than that, they would color the drippings?

The Witness: Yes.

The Court: And you could get green and red—and what is the other?

Mr. Lyon: Blue.

The Court: Blue?

The Witness: Drippings, yes.

Q. (By Mr. Lyon): Mr. Bechtold, I believe you said that you do not find among the compounds called for in the Fredericks patent barium chro-

(Testimony of Ira C. Bechtold.)

mate. You do find that barium is one of the metals that is listed, do you not? A. Right.

Q. And you do find that in addition to the various salts mentioned Fredericks says "and other salts"? A. Right.

Q. Is barium chromate another salt of barium?

A. Yes.

Q. Then to that extent, at least, it is [330] within the called for materials of the Fredericks patent, is that correct? A. Yes.

Q. Do you agree that barium chromate in sufficient quantity would dye the drippings of a candle yellow? A. I don't know.

Q. You didn't, in making up your Exhibit 18 wax pads, you didn't make one with ferric acetate, did you? A. Yes.

Q. Which one is it?

A. Well, I will have to change that. You said in Exhibit 18?

Q. That is right.

A. No, there is none in Exhibit 18.

Q. Ferric acetate would be red, wouldn't it?

The Court: That is, introduced into the wax?

Mr. Lyon: Right.

The Witness: Ferric acetate?

Q. (By Mr. Lyon): Ferric acetate is a red powder, isn't it?

A. May I refer to my references?

The Court: How much longer will you be?

Mr. Lyon: I have got to go through five of these

(Testimony of Ira C. Bechtold.)

things. If he has to look up every one in the book, it will take a little while. [331]

The Witness: Do you refer to a simple ferric acetate?

Q. (By Mr. Lyon): If you have to make any qualifications, you do so. You are the chemist.

A. I do not believe there is such a compound as ferric acetate.

Q. Iron acetate? A. Which one?

Q. Any one.

A. I do not know what the color would be.

The Court: Do you mean you are going to go through the whole 146 of these things?

Mr. Lyon: No, your Honor. Just the ones on page 13 of the interrogatories.

And in view of the fact that the witness says he doesn't know, I am not even going to bother to do that.

I will ask you one thing, though:——

Q. Ferric hydroxide would be one of the chemicals listed in the Fredericks patent, would it not?

The Court: Chemicals?

Q. (By Mr. Lyon): One of the metallic salts listed in the Fredericks patent? A. Yes.

Q. It does call for iron salts and it calls for hydroxides? A. Yes. [332]

Q. And it does say to mix the same with oleic or stearic acid, does it not?

I call your attention to line 40, page 2, of the Fredericks patent:

"In this saturated solution"——

(Testimony of Ira C. Bechtold.)

The Court: Which column?

Mr. Lyon: Column 2, beginning line 43:

"In this saturated solution is dissolved another vehicle such as oleic or stearic acids to the saturation point by heating. To the melted material, such as paraffine or stearine, or their combinations, as well as the other candle materials," and so on.

So it, therefore, calls for the incorporation of this material in oleic or stearic acid, does it not?

The Witness: No. It says——

Q. (By Mr. Lyon): "Should a red colored flame be desired, a metallic salt such as strontium chloride or lithium chloride is dissolved in one of the vehicles, such as an alcohol, to a saturated solution. In this saturated solution is dissolved another vehicle such as oleic or stearic acid * * *"

Doesn't that mean that you put the strontium chloride together with oleic or stearic acid?

A. Not until another step has been completed.

Q. What step? A. I read:

"To the melted candle material, such as paraffine or stearine, or their combinations, as well as the other candle materials or their combinations, which are named herein, is added a small amount of the saturated combination, in small quantities, according to the amount of color desired in the flame * * *"

Q. Now, Mr. Bechtold, are we quibbling or does the Fredericks patent tell you to combine your coloring material, whatever it is, with oleic or stearic acid? A. In another vehicle, yes.

Q. Oleic or stearic acid is an oil, is it not?

(Testimony of Ira C. Bechtold.)

A. No.

Q. What is an oil?

A. Oleic acid is an acid, an organic acid.

Q. A fatty acid, is it not?

A. Yes, it is one of the fatty acids.

Q. Oils include fatty acids, do they not?

A. Not necessarily.

The Court: Is it used in making candles?

The Witness: I am not a candlemaker.

Q. (By Mr. Lyon): Well, I take it that is the basis for stating, then [334] that the ferric hydroxide in combination with oil is not shown in the Fredericks patent in that you do not consider oleic or stearic acid oil, is that right?

A. No, that is one reason.

Mr. Lyon: I have no further questions

The Court: No more questions?

Mr. Lyon: No.

The Court: Step down.

Mr. White: I would like to have the witness' other answer to that. He said that is one reason. May we have the second reason, please?

Q. (By Mr. Lyon): Do you have another reason? A. Yes.

The lines you referred to, page 2, column 2, lines 38 on, refers to strontium chloride or lithium chloride, not ferric hydroxide in combination with oil.

Q. I see. You object to my going from one part of the patent to another, is that it? A. Yes.

Q. Referring again to this dictionary, "The Condensed Chemical Dictionary," which you agreed

(Testimony of Ira C. Bechtold.)

with a minute ago: "Oleic acid (oleinic acid; 'red oil')"

What does red oil mean there when used in the definition in this chemical dictionary of oleic acid?

A. That is a colloquial term used in the past to describe oleic acid. I think it was known once also as turkey red oil.

Q. Now turkey red oil is a sulfonated oil. I happen to know that because I had a patent on it.

Would you agree with this in the same dictionary with respect to uses of oleic acid:

"Uses: soap stock; manufacture of oleates; ointments; polishing compounds; oiling wool; cosmetics; fluid gauges; ore flotation." A. No.

Mr. Lyon: That is all.

The Court: Do you have any more questions of this witness?

Mr. White: No, your Honor.

The Court: You are excused.

(Witness excused.)

The Court: We are recessed until 10:00 o'clock tomorrow morning.

(Whereupon, at 5:00 o'clock p.m., an adjournment was taken until 10:00 o'clock a.m., Friday, March 23, 1956.) [336]

The Court: Do you have further testimony?

Mr. White: Very little, your Honor.

The Court: Very well.

No ex parte matters?

The Clerk: No, your Honor.

Mr. White: Before recalling Mr. Wilson, your Honor, I notice in checking the record that evidently I did not read into the record Plaintiff's Interrogatories 15 and 19, and the answers thereto. I would like to ask permission for the reporter to copy those into the record, please.

The Court: If you haven't, that will be the order. The order will be to copy question 19 and the answer, and question 15 and the answer.

I was under the impression that you had read 15, because I recall——

Mr. White: I believe, your Honor, I did so indirectly by referring to it in talking about the answer to another interrogatory.

The Court: Yes, I think now that I recall, that you used that as the basis of one of your questions in the cross examination of Mr. Muench.

Mr. White: That is right, your Honor.

The Court: So that will be the order, to copy 15 and the [340] answer, and 19 and the answer, into the record as if they were read as this time.

(Interrogatories 15 and 19 and the answers thereto appear in the following words and figures, to-wit):

Question 15: (a) Does defendant contend that a candle made according to any of the individual descriptions and showings in any of the following patents, to wit,

Harnich, United States, 1,596,017.

Minrath, United States, 1,608,518.

Funke, United States, 1,701,844.
Nelson, United States, 1,908,044.
Fredericks, United States, 2,184,666.
Turner, United States, 2,196,509.
Sterry, British, 95.
Ascough, British, 3,478.
Smith, British, 5,902.
Field, British, 122.
Hausamann, German, 1,547,209.

will upon burning form in an unpredictable succession and to any considerable extent on the body of the candle different colored drippings colored differently from the candle body?

(b) If the answer to the foregoing (15a) is in the affirmative, state which patent or patents discloses a candle that will so perform upon burning.

Answer: (a) Yes. (b) Nelson and Fredericks.

Question 19: Which of such coloring compounds as defendant may list in answer to Interrogatory 17, has defendant actually used in either its "Make-a-Rainbow" or "Cascade" or any other similar commercially sold candles?

Answer: Copper acetate:

Mr. White: I should like to make sure at this time that all of plaintiff's exhibits marked for identification are admitted in evidence.

The Court: I don't know. That red candle with all the gobbledy-gook on the outside, I don't believe anyone testified to it.

The Clerk: This one?

The Court: Somebody made a statement as to

what that was. I don't believe anyone testified about it.

The Clerk: It was admitted.

Mr. White: Did I refer to defendant's exhibits?

The Clerk: No.

The Court: Plaintiff's.

Are those defendant's?

Mr. Lyon: Yes.

The Court: If plaintiff's exhibits are marked for identification and have not heretofore been admitted, they are admitted now. [341]

Mr. Lyon: I am quite sure that all of the defendant's are in, but just to make sure, may we have a protective order?

The Court: Yes.

The Clerk: 18-A to 18-L were admitted.

Mr. White: Yes, those were the last referred to.

Mr. Wilson, will you take the stand.

LESTER F. WILSON

the plaintiff herein, having been previously duly sworn, was examined and testified further in rebuttal as follows:

Direct Examination

Q. (By Mr. White): On page 119 of the transcript I read the following question by the court and answer by the witness, Mr. Muench.

"The Court: Is this the kind of candle stock that is non-drip or generally referred to as the drip stock?

"The Witness: The stock isn't such that it would

(Testimony of Lester F. Wilson.)

be non-drip. There aren't any candles made that in the draft really won't drip.

"These candles are made particularly, as all these supposed multi-colored drip candles, with a small wick so they haven't the capacity to carry the amount of wax. [342]

"Any of these candles in a room that has no draft—for instance, with the so-called drip candles—if they are put in with a large wick, won't drip at all if there is no draft, so they are not really a dripping candle unless the wick is small."

Mr. Wilson, do you agree with that statement?

A. Yes, sir.

Q. Is it factually true? A. I think so.

Q. On pages 119 and 120 we find the continuing questions by the court and answers by the witness.

"The Court: That is what makes it drip?

"The Witness: That is what makes it drip.

"The Court: The size of the wick?

"The Witness: The size of the wick. If there is a strong draft they will drip anyway with a large wick because in burning the flame is supposed to stand upright. If there is a draft like you have here blowing the flame sideways, it heats the edge of the candle and melts down that edge and allows the wax to drip out, whether it is white or colored or anything else."

Mr. Wilson, do you agree with Mr. Muench's statement concerning the effect of the wind? [343]

A. Yes.

Q. At page 95 and following in the record we

(Testimony of Lester F. Wilson.)

have reference to correspondence between the I. S. & S. Products Coordinators and Mr. Muench concerning an infringement charge made by the plaintiff against I. S. & S. Mr. Wilson, do you know what response I. S. & S. Products Coordinators made to your charge of infringement?

A. They discontinued manufacturing the candle.

Q. Mr. Wilson, have you had any difficulty in obtaining any of the chemicals used in all of your exhibits which have employed chemicals?

A. No.

Mr. White: That is all. [344]

The Court: Cross examine.

Cross Examination

Q. (By Mr. Lyon): Mr. Wilson, are you familiar with the drip candle that has been manufactured, advertised and offered to the trade by the Penn Wax Works of Philadelphia, Pennsylvania?

A. I have heard of it.

Q. Do you charge that to be an infringement of your patent?

Mr. White: That is objected to as entirely irrelevant and immaterial.

Mr. Lyon: It is just as relevant and material as whether I. S. & S. discontinued making candles.

Mr. White: I. S. & S. discontinued pursuant to a request to discontinue.

Mr. Lyon: Here is another company that hasn't discontinued.

(Testimony of Lester F. Wilson.)

The Court: I do not know whether it has or has not. It is not in evidence.

Mr. Lyon: I have a question before the witness.

The Court: The question is, does he charge their candle to be an infringement.

Mr. Lyon: That is right.

The Court: The objection is sustained on the ground that there is no foundation laid. I do not know what their [345] candle is.

Mr. Lyon: I asked him if he is familiar with it.

The Court: He is familiar with it but what difference does that make? I am the one who has to decide that.

Mr. Lyon: I will ask a few more questions, then.

The Court: He may know whether their candle is but I do not.

Q. (By Mr. Lyon): The Penn Wax Works of Philadelphia, Pennsylvania, is manufacturing and offering for sale and advertising a candle having a plain exterior but which drips on burning with successively different colored drippings, does it not?

A. I don't know personally.

Q. Do you happen to know——

A. I haven't seen their advertisements.

Q. Do you happen to know whether the Ajello Company of New York City is manufacturing a candle which, upon burning, will drip successively different colored drippings?

A. I don't know at the present time, no.

Q. Do you know at any time?

A. Several years ago they did.

(Testimony of Lester F. Wilson.)

Q. Would your answer be the same as to the Penn Wax Works?

A. All I know is hearsay. I have never seen the candle. [346]

Mr. Lyon: That is all.

The Court: Step down.

(Witness excused.)

The Court: Next witness.

Mr. White: The plaintiff rests.

The Court: Does the defendant?

Mr. Lyon: Mr. Muench.

NORBERT C. H. MUENCH

recalled as a witness in surrebuttal, having been previously duly sworn, testified as follows:

Direct Examination

Q. (By Mr. Lyon): Mr. Muench, at the present time is the Penn Wax Works of Philadelphia, Pennsylvania, manufacturing and offering for sale and advertising in the trade publications a candle which, upon burning, will drip different colored waxes successively? A. Yes, they are.

Q. Would your answer be the same as to the Ajello Company of New York City?

A. Same answer.

Mr. Lyon: No further questions.

The Court: Step down.

(Witness excused.)

* * * * * [347]

The Court: Any ex parte matters?

The Clerk: No, your Honor.

Case No. 15273-PH, Wilson v. Muench-Kreuzer Candle Company. Further trial. All parties present, your Honor.

The Court: Mr. White, you had something additional to say.

Mr. White: Counsel has made reference to the 10 metallic salts listed in the answer to Interrogatory 18 in reference to the Fredericks and Nelson patents, and I believe the statement was, in effect, that I had admitted that those were wax coloring materials.

That is not quite true. All I said was that that is what the defendant said.

Mr. Lyon: I thought you said you would give us credit for it.

Mr. White: I will give you credit for having answered as to 10 out of 146 compounds.

Now whether they do or don't is something else again. The only one which defendant admitted having ever used in any of its multi-colored drip candles was acetate.

The Court: That is the copper?

Mr. White: I beg your pardon. Copper acetate.

The Court: And that is the only one in all of these [396] exhibits here of metallic salt that is used and that produced a color?

Mr. White: No.

Mr. Lyon: No. Copper chloride was also used in Exhibit E. It was the paler of the two greens.

The Court: A copper derivative.

Mr. Lyon: Yes.

The Court: These other exhibits here are aniline, is that right?

Mr. Lyon: No, your Honor.

The Court: Exhibit 13-A?

Mr. Lyon: 13-A is aniline.

The Court: Yes.

Mr. Lyon: Exhibit D is formed with——

The Court: I have a note of it here.

Mr. Lyon: That was the Sheppard Chemical Company salts that Mr. Muench used in making up that exhibit.

Your Honor will recall yesterday Mr. Bechtold agreed with me that we could get a red or a blue from copper sulphate and a red from iron oxide, ferric oxide, Prussian red. We didn't have that in any of the exhibits but Mr. Bechtold stated that if you used enough of those you could.

The Court: Now this D-2, I have a note here that that is made after the Nelson patent.

Mr. Lyon: That is the Du Pont dichlopentadienyliron [397] salts, copper chloride, copper acetate and cadmium sulphide.

The Court: Very well. Go ahead, counsel. [398]

Mr. White: As to that exhibit, the du Pont dichloro et cetera compound, cadmium sulfide had to be found by going outside of Nelson.

Counsel referred, I believe, to the Byron Jackson-Wilson Elevator case, the barn door latch and elevator latch, and as I recall counsel's statement the barn door latch was adjudicated to anticipate the elevator latch.

In that case the barn door latch at least had been in existence and was workable.

Reference was made to this question of infringement or non-infringement of claim 1 by the candle made in accordance with Defendant's Exhibit N. I believe the argument was advanced that if one applies this muetter farben, which is dye in wax, to the outside of this taper No. 2, then one cannot say that that dye had not been dissolved in the candle body wax.

As I recall—I stand subject to correction on this—defendants' first Make-a-Rainbow candle was manufactured by applying muetter farben directly to the wick. Defendant did not deny infringement there.

Now, during my questioning of Mr. Muench yesterday, I believe we came to an agreement that whether we call it the body of the candle or candle stock——

The Court: If you turn around and face the other way, the reporter will be able to hear you.

Mr. White (Continuing): If we regard the white wax substance of the candle as the candle body, or Mr. Muench preferred to regard it as candle stock, it extends from the wick to the outer surface of the candle. Therefore, if we have muetter farben on the wick, or on the taper, they amount to the same thing. And in reference to the terminology of claim 1, if the first Make-a-Rainbow drip candle was an infringement, the latter one most certainly must be.

Counsel, I believe, stated——

The Court: I didn't get that point very clearly,

except your last statement that if the first one was an infringement, the process of Exhibit N must certainly be. Why?

Mr. White: The argument, as I understand it, your Honor, against infringement is that when one puts this meutter farben, which is coloring material, on taper No. 2——

The Court: It is then dissolved in the body of the candle?

Mr. White: The theory apparently is that the wax content of the muetter farben becomes a part of the body wax or the candle stock.

Well, it is precisely the same with defendant's first Make-a-Rainbow candle, because there the dye was in some wax, and it was applied to the wick an eighth of an inch in closer, but that was was just as much, if any, a part of the candle stock or the candle body as it is here. It makes no [400] difference.

Now, I believe counsel stated, with reference to Nelson and Fredericks, whether valid for coloring the flame I don't care——

The Court: Whether what—valid?

Mr. White: Whether valid for coloring flame I don't care.

The Court: He still maintains that they are anticipation?

Mr. White: Yes. It doesn't make any difference whether they do what they say that do or not.

The Court: All right.

Mr. White: I think it is pertinent that we just have reference to Judge Learned Hand's—— [401]

The Court: A little law always helps in a lawsuit.

Mr. White: —statement of one of the elementary principles and doctrines of patent law appearing in a well-litigated case of Dewey & Almy Chemical Company, et al., v. Mimex Company, Inc., Circuit Court of Appeals for the Second Circuit, decided January 5, 1942, appearing in 1244 F(2d) page 986.

In that case Judge Hand made this statement——.

The Court: My bailiff will get the book and I will follow you a little closer.

Mr. White: Very well, your Honor.

Your Honor, I am referring to the pocket edition series of lawbooks, United States Patent Quarterly, so I am sorry I cannot direct you to the page.

The Court: Are the headnotes the same as they are in West?

Mr. White: I am referring now to Headnote No. 2.

The Court: "Patent No. blank for latex seal for cans and containers held invalid for lack of invention"?

Mr. White: Apparently they are not the same, your Honor.

As the decision is printed here, I am referring to the beginning of the second from the last long paragraph. They are both long paragraphs, but it starts, "No doctrine of patent law."

The Court: Yes, I have it. [402]

Now before you read that, let me see who was trying to do what to whom here and why.

That is the patent from which this headnote would be taken, "A prior patent or other publica-

tion to be an anticipation must bear within its four corners adequate directions for practice of the patent invalidated and if it offers no more than a starting point for further experiments or its teachings will sometimes succeed and sometimes fail or it does not inform the art without more how to practice the new invention, it is not anticipation." Is that the principle?

Mr. White: That is the principle, your Honor. It is not just the language that I have here, though.

The Court: Very well. I shall follow you. Go ahead.

Mr. White: It is there stated that it must bear within its four corners. Now that means what the patent says on its face, as I represented this morning.

It is nothing that will permit of experimentation to find out what it is or what it might do. And the court stated:

"If he earlier disclosure offers no more than a starting point for further experimentation—" Now that is all certainly that Fredericks and Nelson did.

"—if its teaching would sometimes succeed and sometimes fail—"

That is at least what happened here. [403]

"—if it does not inform the art without more how to practice the new invention—"

The are here didn't say one word about drip candles or the formation of wax drippings or anything of the sort.

"—it has not correspondingly enriched the store of common knowledge and it is not an anticipation."

The Court: Well, how about this statement in that same paragraph:

"Tested by this doctrine Newton's disclosure was inadequate for several reasons—"

I do not know who Newton was here.

Mr. White: The court was concerned about the sufficiency of that Newton British patent.

The Court: Which was a prior patent?

Mr. White: Yes.

The Court: All right.

"We do not rely upon the fact that he was not concerned with making a sealing composition but only with finding a carrier for pigments effectively to print or stain fabrics. We shall assume that if his process would have uniformly resulted in the patented seal it would have been a good anticipation even though it took a second authentic act of creative imagination to discover [404] its fitness for the new use. The difficulty lies not in its failure to anticipate the new use but whether he actively disclosed or failed to disclose."

Let me finish reading it counsel. (Examining citation.)

The Court: He goes on to say:

"Even if he had remedied the use of gum with pigments and even if his directions to grind the pigments fine had been a direction to use the equivalent of a colloid mill, success or failure would have remained the sport of accident, as we have seen. It was hit or miss for the best of reasons. Newton was not aiming at the target.

That alone would have been enough."

Mr. White: And that is precisely, your Honor, the situation we have here.

The Court: Very well.

Mr. White: That concludes my remarks, your Honor. Thank you.

The Court: I would like to ask Mr. Lyon a question, and maybe Mr. White too.

In the Nelson patent upon which you rely it states in column 1 at line 11:

"As is well known a candle consists of two component parts, namely, the body and the wick." [405]

Therefore everything that is not wick is body.

In the plaintiff's patent in Claim 1 he says that he claims a drip candle comprising a waxlike body, different wax soluble dyes normally concealed within the interior of the body at different locations longitudinally thereof and normally undissolved in the wax of said body, and so forth, and said dyes dissolving in the melted wax of the body to perform multi-colored drippings as the candle progressively burns.

Now if a wax is a part of the body it is not in the body.

Mr. Lyon: Are you asking me?

The Court: I am asking you.

Mr. Lyon: I think, your Honor, that if the wax is prepared in the manner in which the defendant prepares it, that is, by first dissolving the wax, dissolving the dye in a body of wax to form this mother color, it is ridiculous to say anytime thereafter that the dye is not normally dissolved in the wax. It is predissolved.

The Court: Very well. I am ready to announce my decision.

The purpose of the invention of Nelson and of Fredericks is stated in the body of their patents. The Nelson patent is headed, "The Art of Making Candles," but it states that the purpose of his present invention is to impart a distinctive color to the flame. [406].

The Fredericks patent is entitled, "Colored Flame Candle," and he states:

"This invention relates to a colored flame candle and consists in applying color-producing metallic salts to the candle wick in a limited straight and a spirally extending path, with the aid of one or more vehicles in such manner that when the candle is lighted it burns with a colored flame."

I don't think there is any doubt but what those two patents, as well as the Funke patent, had for their purpose the object of producing a colored flame, and not of producing an ornamental candle after or during the time it was burning.

In the Fredericks patent, upon which the defendants rely, it does set forth on page 2 the color producing metallic salts, and so forth. And I understand from counsel's contention that there is stated in there an acetate which is not necessarily a metallic salt. However, in the claims he mentioned nothing, in each one of them, claim 1, 2, 3, and 4 of the Fredericks patent, he does not mention any kind of a coloring material except that in each one he says he claims a metallic salt.

And insofar as Nelson is concerned, the salts

which he described—he does not describe aniline—he describes different kinds of salts, so I think under the doctrine, which is best pointed out here in the Dewey vs. Almy case, [407] but which is also borne out by the Mohr, and the Flakice case, which were cited this morning, that these two patents, as well as the several others upon which the defendant has relied, but principally the Nelson and the Fredericks patents, must be viewed with the idea that they were attempting to disclose a useful invention for some purpose other than that for which the plaintiff has his purpose, as stated in the first paragraph of his invention.

I realize that there is a very great restriction upon the specifications in a patent, and while there are some authorities to the effect that you can only consider what is in the claim, nevertheless I think the rule still prevails that when you come to interpreting a claim, that you may have recourse to the specifications that are in the patent, to ascertain what was meant by the claims in the patent.

The two things that were sought here in the Wilson patent, No. 1, was the matter of getting the multi-color in the candle as it burned, but the other one, which was just as important, it seems to me, was the concealment of it.

He states in the first paragraph: "This invention has for its general object to provide a novel and distinctively unique drip candle"——

Incidentally, I may say that none of the other patents refer to a candle which is made for dripping purposes. [408] Continuing reading:

—"distinctively unique drip candle characterized by its ability to form multi-colored drippings notwithstanding the fact that to all outward indications, and even upon closest inspection, the candle may appear the same as any ordinary candle, the drippings from which correspond to the color of the candle.

"The usual drip candle is of course made of a wax or body material," and so forth.

And then he refers to a wick and he goes on to describe the placing of his aniline or other suitable dyes in the wick.

Keeping that in mind and reading claim 1, it seems to me that what is meant by claim 1, the phrase "normally undissolved in the wax of said body" means that it is normally undissolved in the wax of the body so that even on closest inspection you cannot tell that there are any colorings in the candle which will drip.

Therefore, it would cover any candle that was not colored all the way out.

So my conclusion is that the plaintiff's patent is valid.

I don't think there is any doubt about claims 2, 3, 4, 5, and 6. The big trouble is No. 1, to determine whether or not claim 1 is valid, and I now determine that it is valid, in [409] view of what I have said. And it necessarily follows that the defendant's candle manufactured in the manner as set forth and shown in Exhibit N is an infringement of claim 1, and the plaintiff is entitled to judgment.

The plaintiff complains here and asks for treble damages.

I do not think that this is a case where the law contemplated that such a drastic remedy should be invoked or imposed.

I suppose by pressing inferences much further than appears to me to be just in this case, one might be able to guess or suppose that maybe Mr. Muench knew about this patent here and followed the plaintiff's teachings. But I don't think that it was that type of conduct which Congress intended to penalize by providing for treble damages, which after all is a very harsh remedy.

It is not the type of conduct such as, for instance, in another case—and I cite it only to illustrate what I have in mind, as to where such a penalty should be invoked—where the defendant took the object of plaintiff's invention and he went to machine shop after machine shop and said, "Make something as near as you can to this, but not quite like it, if you can."

Now, that is the type of conduct which I think is intended to be covered by the treble damage section. [410]

There remains the question of damages. The parties have put on no evidence of that, except the number of candles, and I haven't read that section lately about damages. What does it provide?

It provides something about reasonable——

Mr. Lyon: The normal thing would be a reference to a master for an accounting.

The Court: Well, that is the usual custom.

Mr. Lyon: May I inquire one thing? Has your Honor overlooked or has he decided the question of the necessary party plaintiff? The Victrylite Company, the exclusive licensee in this matter?

It is our position that this case cannot——

The Court: They were the exclusive licensee only on one type of candle. Let me see that agreement. What is that exhibit?

Mr. White: Exhibit 5, your Honor.

The Court: I don't think that it is the exclusive licensee—in the first place, it is not an exclusive license, is it?

Mr. White: No, your Honor, it is not.

Mr. Lyon: It is exclusive except for a reservation of a personal license in the plaintiff.

The Court: "* * * Licensor hereby grants to licensee an otherwise exclusive license under [411] said patent, limited, however"——

Wait a minute.

"Reserving in himself, his successors and assigns a single and indivisible right of manufacture, use and sale of candles embodying the invention of said patent, licensor hereby grants to licensee an otherwise exclusive license * * *"

I don't believe that this is an exclusive license. I think under the terms of this contract that — of course, that isn't before me for adjudication at this time in connection with this matter, but it would appear to me offhand that if the plaintiff attempted to license somebody else to do the things which he has licensed Victrylite Candle Company to do, that Victrylite would be entitled to restrain the plaintiff

and to restrain the other people, because he reserves in himself, his successors and assigns a single and indivisible right of manufacture. The indivisible right of manufacture, I take it, is a limitation upon his rights to license somebody else to make a candle core. But he has the right to license somebody else to make a candle from a dyed wick. [412]

Mr. White: No rights were granted, your Honor, under Claims 2 to 6 of the Wilson patent.

The Court: I do not see how they could because 2 to 6, Mr. White, covers wicks and here he is reserving to himself, he is not granting to the other party, the right to have dyed wicks. He says that the exclusive license is limited, however, to the manufacture, use and sale of candles having dyed cores as distinguished from dyed wicks.

Now 2, 3, 4, 5 and 6 relate to dyed wicks, do they not?

Mr. White: That is right.

The Court: And No. 1 is the only one that could be a dyed core.

Mr. White: That is right.

Mr. Lyon: The Independent Wireless and Telegraph Company v. RCA, 269 U. S. 459, Judge Taft stated——

The Court: Let me see it. It is not that I doubt what you say, counsel, but so many times I can have a better understanding of what the case is about if I look at it.

Mr. Lyon: I have a lot of them here.

The Court: What does he say and where does he say it?

Mr. Lyon: At page 361 of L. Ed., he said, "Both the owner and the exclusive licensee are generally necessary parties in an action in equity."

The Court: I think that would be correct, counsel, if the Victrylite Company were the exclusive licensee, but they [413] are not the exclusive licensee.

Mr. Lyon: Do you think that this decree affects their rights?

The Court: No, I don't think this affects their right at all.

Mr. Lyon: Suppose you had held the patent invalid, would that decree affect their rights to be the exclusive person who could put dye on the core of a candle? I think it would.

The Court: If I held this decree to be invalid they have a decree in their case adjudicating that it is valid and they have in my judgment probably estopped themselves from claiming that they would not owe the plaintiff any royalty under candles that they manufactured.

Mr. Lyon: But, your Honor, can't you see that if you had held this patent invalid then the grant which has been made to them of a monopoly to form this kind of candle would be extinguished necessarily involved in a decree of this court is an adjudication of their rights to a monopoly. Because assuming that your decision becomes a final decision, if you had destroyed that patent you would have destroyed the monopoly which has been granted to the Victrylite Candle Company. In Shields v. Barron,

the leading case on the subject of who are indispensable parties——

The Court: That is not Shields v. Barron, it is Shields [414] v. Barrow. I have cited it hundreds of times.

Mr. Lyon: What they said there was, "Persons who not only have an interest in the controversy but an interest of such a nature that a final decree cannot be made without either affecting that interest or leaving the controversy in such a condition that its final determination may be wholly inconsistent with equity and good conscience."

Now if you had decided this patent were invalid you would have destroyed the Victrylite Company's rights to be the only person to put out a candle such as Exhibit N.

The Court: Now Shields v. Barrow is discussed at length by a Ninth Circuit case, the name of which escapes me for the moment, but in which the Ninth Circuit points out that what is meant by an indispensable party if this, that there is a necessary party, a conditionally necessary party and an unconditionally necessary party. An indispensable party is an unconditionally necessary party.

That is to say, that the rights of the people before the court cannot be adjudicated without their presence, and the rights of the people before this court now can be adjudicated without the presence of Victrylite.

Mr. Lyon: All I am asking, your Honor, is to rule on it.

The Court: I have ruled against you.

Now what about the matter of damages? There was an exhibit here showing the total number of candes which the [415] plaintiff sold, and there was an exhibit showing the total number of candles which the defendant sold.

Mr. Lyon: No.

Mr. Muench: That was from Victrylite.

The Court: I thought it was the total number that the defendant sold.

Mr. White: You had asked, I believe, your Honor, of Mr. Muench as to how many of the first Make-a-Rainbow colored candles he had made and sold, and Mr. Muench said he didn't know but I think he just guessed at a possible figure of 100,000.

Mr. Muench: How many did you say, Mr. White?

Mr. White: 100,000.

Mr. Muench: It wasn't far from that. I found out since that up until September 5, 1952, we had made 115,172 pieces.

Mr. White: Then there was at least evidence of damage in the showing of what happened to the plaintiff's candle sales starting and continuing after the defendant's entry into the multi-colored drip candle field.

The Court: What is that section of the Code?

Mr. Lyon: 70.

The Court: What is the section of the United States Code?

Mr. Lyon: 35 U. S. Code Section 70. It might just possibly be 71 but I am almost certain it is 70. [416]

The Court: There is no 70. It is U. S. 3542, then it jumps to 101.

Mr. Lyon: 70 has been repealed and if you will hand it to me I will find it.

The Court: I can probably save time by looking at the index.

Mr. Lyon: Damage is Section 284.

The Court: What is the desire of the parties? Do you wish the matter to be referred to a Master for the ascertainment of damages, or do you wish the court to take testimony as to what a reasonable royalty would be?

Mr. White: Mr. Lyon suggested reference to a Master, which I think would be satisfactory to the plaintiff.

Mr. Lyon: It is usual in these cases to withhold the question of damages if there is an appeal which would stay the accounting, and so on.

The Court: That is true, but here is what I have in mind in connection with this case: It appears that it might be quite possible that Mr. White would accept a statement from the Muench-Kreuzer Candle Company of the number of candles they have sold. If that is the case then the court can receive evidence of a reasonable royalty and you can save the cost of an extensive reference.

Now are you willing to accept Mr. Muench's statement that he made just now as to the number he sold before he discontinued [417] the dyeing of the wick?

Mr. White: 115,000, was it?

Mr. Muench: 115,172.

I made that figure some time ago and it checked well then, Mr. White.

Mr. White: That is a point, your Honor, on which I would like to consult with my client, but if we can leave this matter of determination of damages in some condition that would permit Mr. Lyon and me to consider the total figures to be submitted, if he cares to, by Mr. Muench, why I would be happy to proceed on that basis and to save the expense of a reference.

The Court: Then the decree as to validity and infringement will be as I have indicated, and the matter of reference to a Master or as to the ascertainment of damages will be as agreed upon by the parties, or if they cannot agree upon further order of the court.

Mr. White: That would be satisfactory, your Honor.

The Court: Is that agreeable, Mr. Lyon?

Mr. Lyon: Yes, sir.

The Court: Very well.

Mr. White: Your Honor, there was included in the prayer I believe a request for an order for an award of attorney's fees.

The Court: Each side will pay their own costs. Court is adjourned.

(Whereupon, at 3:00 o'clock p.m., court was adjourned.)

[Endorsed]: No. 15,132. United States Court of Appeals for the Ninth Circuit. Muench-Kreuzer Candle Co., Inc., a corporation, Appellant, vs. Lester F. Wilson, Appellee. Transcript of Record. Appeal from the United States District Court for the Southern District of California, Central Division.

Filed: May 18, 1956.

/s/ PAUL P. O'BRIEN,
Clerk of the United States Court of Appeals for the Ninth Circuit.

In the United States Court of Appeals
for the Ninth Circuit

No. 15,132

MUENCH-KREUZER CANDLE CO., INC., a corporation, et al., Appellant,

vs.

LESTER F. WILSON, Appellee.

STATEMENT OF POINTS FOR DEFENDANT-APPELLANT

The points of error of the District Court which defendant intends to urge on Appeal from the Judgment of the Court in favor of plaintiff in the above-entitled action are as follows:

I.

The District Court erred in concluding that

Claims 1 to 6 and each of them of the patent in suit No. 2,464,361 are good and valid in law.

II.

The District Court erred in failing to find that Patent No. 2,464,361 and each of the claims thereof are invalid and void for want of invention over the prior art.

III.

The District Court erred in failing to find that Patent No. 2,464,361 and each of the claims thereof are invalid and void and unenforceable for having been procured by a fraud perpetrated upon the United States Patent Office by reason of a false representation made in plaintiff's brief on Appeal to the Patent Office Board of Appeals that "The metallic salts and the like employed for flame coloring in the references are not dyes, they are not wax soluble, and they would not affect the color of drippings if the candles were of the drip producing type."

IV.

The District Court erred in concluding that candles manufactured by defendant-appellant since September 5, 1952, infringe Claim 1 of Patent No. 2,464,361.

V.

The District Court erred in concluding that "Examination of the file history of the Wilson patent application reveals no estoppel against plaintiff's assertion of validity and infringement."

VI.

The District Court erred in failing to conclude that Claim 1 of Patent No. 2,464,361 is limited to a candle in which the dyes are "normally undissolved in the wax of said body" and hence not infringed by candles as manufactured by defendant-appellant since September 5, 1952, in which the dyes, prior to application to the taper, are first dissolved in wax.

VII.

The District Court erred in concluding that the prior art relied upon by defendant does not support defendant's contentions of invalidity in view of the rules and laws as laid down in J. A. Mohr & Sons vs. Alliance Securities Co.; Standard Oil Company vs. Same (Ninth Circuit Court of Appeals 1926), 14 F.2d 799; Flakice Corporation vs. Liquid Freeze Corp., 130 F.Supp 471 (D.C.N.D. Cal., 1955); Dewey & Almy Chemical Company, et al., vs. Mimex Company, Inc. (Second Circuit Court of Appeals) 124 F.(2d) 986.

VIII.

The District Court erred in concluding that Victrylite Candle Company is neither a necessary nor indispensable party in this Action.

IX.

The District Court erred in concluding that plaintiff is entitled to an injunction and an accounting for profits and damages by reason of defendant's infringement.

X.

The District Court erred in failing to find that all candles drip.

XI.

The District Court erred in refusing to find, as requested by defendant, that certain of the metallic salts listed in the Fredericks Patent No. 2,184,666, when placed in sufficient quantities on the wick of a candle which drips, will color the drippings of said candle, specifically including copper acetate, cuprice chloride, copper hydroxide and ferric oxide.

XII.

The District Court erred in failing to find, as requested by defendant, that the use of analine dyes, both in the wick and as a dye to color the core of a candle a different color than the main body of a candle was old in the art prior to the time when plaintiff made the invention embodied in the patent in suit.

XIII.

The District Court erred in finding that none of the prior patents or publications relied upon by defendant refers to a drip candle, or reveals any contemplation of making a candle which characteristically is of a wax dripping type.

XIV.

The District Court erred in failing to find that since 1941 defendant has manufactured and sold, and advertised in its catalog its Star-Pillar candles

in which wax colored differently than the exterior of the candle drips upon burning.

XV.

The District Court erred in failing to find the German Patent 157,209 of December 28, 1904 discloses a candle which upon burning drips a wax over the exterior of the candle colored differently than said exterior.

XVI.

The District Court erred in failing to find that Great Britain Patent 95 of 1871 discloses a candle which upon burning drips a wax over the exterior of the candle colored differently than said exterior.

XVII.

The District Court erred in failing to conclude that the patent in suit discloses a mere multiplication of defendant's Star-Pillar candle, or of said candle of said German patent No. 157,209 or of said British Patent No. 95 of 1871 and hence no invention over the prior art.

Dated this 18 day of May, 1956.

LYON & LYON,
/s/ By CHARLES G. LYON,
Attorneys for Defendant-Appellant

Affidavit of Service by Mail attached.

[Endorsed]: Filed May 22, 1956. Paul P. O'Brien, Clerk.

[Title of U. S. Court of Appeals and Cause.]

DEFENDANT-APPELLANT DESIGNATION OF PORTIONS OF THE RECORD

To the Clerk of the United States Court of Appeals for the Ninth Circuit:

Please include in the printed record in the above-entitled case now on Appeal to this Court the following:

1. The Complaint, filed March 6, 1953.
2. Answer, filed April 8, 1953.
3. Stipulation dated August 26, 1953.
4. Findings of Fact, Conclusions of Law and Judgment dated April 12, 1956.
5. Notice of Appeal dated April 19, 1956.
6. Bond on Appeal, filed April 23, 1956.
7. Supersedeas filed April 23, 1956.
8. Transcript of Trial pages 4-347, 396-419.
9. The following exhibits:

Plaintiff's Exhibit 1, Wilson Patent 2,464,361.

Plaintiff's Exhibit 5, Victrylite License Agreement.

Plaintiff's Exhibit 6.

Plaintiff's Exhibit 10.

Plaintiff's Exhibit 11.

Plaintiff's Exhibit 15.

Defendant's Exhibit A, prior art patents.

Defendant's Exhibit B, Stipulation.

The following exhibits to be treated as physical exhibits and not part of the printed record:

Plaintiff's Exhibit 2.

Plaintiff's Exhibit 3.
Plaintiff's Exhibit 4, 4A-D.
Plaintiff's Exhibit 7.
Plaintiff's Exhibit 8.
Plaintiff's Exhibit 9.
Plaintiff's Exhibit 12.
Plaintiff's Exhibit 13.
Plaintiff's Exhibit 14.
Plaintiff's Exhibit 16.
Plaintiff's Exhibit 17 A-B.
Plaintiff's Exhibit 18 A-L inclusive.
Defendant's Exhibit C.
Defendant's Exhibit D, D-2.
Defendant's Exhibit E, E-2, E-3.
Defendant's Exhibit F.
Defendant's Exhibit G, G-2.
Defendant's Exhibit H, H-1.
Defendant's Exhibit I-1, I-2.
Defendant's Exhibit J.
Defendant's Exhibit N.
Defendant's Exhibit O.
Defendant's Exhibit P.
Defendant's Exhibit Q.
10. This Designation.

Dated this 18th day of May, 1956.

LYON & LYON,
/s/ By CHARLES G. LYON,
Attorneys for Defendant-Appellant

Affidavit of Service by Mail attached.

[Endorsed]: Filed May 22, 1956. Paul P. O'Brien, Clerk.

LIBRARY
SUPREME COURT, U.S.

FILED
SEP 20 1957
JOHN T. FEY, Clerk

No. 489

No. 15132

United States
Court of Appeals
for the Ninth Circuit

MUENCH-KREUZER CANDLE CO., INC., a corporation, Appellant,

vs.

LESTER F. WILSON, Appellee.

Transcript of Record

In Two Volumes

Volume II.

Book of Exhibits

(Pages 327 to 394, inclusive)

Appeal from the United States District Court for the Southern District of California, Central Division

Phillips & Van Orden Co., 870 Brannan Street, San Francisco, Calif. —10-8-56

FILED
OCT 24 1957
PAUL P. O'BRIEN

No. 15132

United States
Court of Appeals
for the Ninth Circuit

MUENCH-KREUZER CANDLE CO., INC., a corporation, Appellant,

vs.

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PLAINTIFF'S EXHIBIT No. 1

Patent in Suit L. F. Wilson No. 2,464,361

Patented March 15, 1949 Filed March 13, 1945

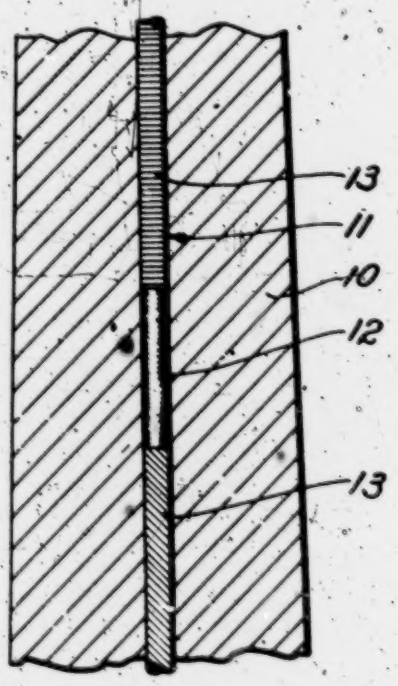
March 15, 1949. L. F. WILSON. 2,464,361

DRIP CANDLE

Filed March 13, 1945

Fig. 1.

Fig. 2.



LESTER F. WILSON
INVENTOR.

BY Hoskins White
ATTORNEY

Patented Mar. 15, 1949

2,464,361

UNITED STATES PATENT OFFICE

2,464,361

DRIP CANDLE

Lester F. Wilson, San Gabriel, Calif.

Application March 13, 1945, Serial No. 582,572

6 Claims. (Cl. 67—22.5)

1

This invention has for its general object to provide a novel and distinctively unique drip candle characterized by its ability to form multi-colored drippings notwithstanding the fact that to all outward indications, and even upon closest inspection, the candle may appear the same as any ordinary candle, the drippings from which correspond to the color of the candle.

The usual drip candle is of course made of a wax or body material, the color of which determines the color of the drippings, since the latter form from melting of the wax and its solidification into drippings which contain whatever coloring material that may be used to color the body of the candle. Thus the ordinary drip candle produces drippings colored corresponding to the normal outside coloring of the candle, and usually the drippings, like the body of the candle, are of a single color.

One of my major purposes is to provide a candle the drippings of which may not only be at any selected variance with the outside coloring of the candle, but also may be multi-colored, so that different individual drippings may have any desired individual colors.

Another object of the invention is to permit the coloring of the drippings to be predetermined and controlled independently of the color or composition of the wax body of the candle. In this respect the invention contemplates coloring of the drippings by suitable coloring material carried by the candle wick, all in a manner such that progressive burning of the candle produces drippings of any desired color or color combinations.

For the purposes of the invention I may use candles of any desired body or wax composition. Preferably I employ body wax compositions used in the well-known types of drip candles, characterized by the relatively large proportion of the wax carry-over as drippings, instead of burning at the flame. In the broad aspects of the invention, the body of the candle, or its exterior, may be colored as desired. It is found particularly advantageous to give the candle a single body or exterior color selected for whatever contrast desired between the normal color of the candle and the color or colors of the drippings. A candle of white exterior or white body is highly effective because of its greater and clearer color contrast with colored drippings. In this connection it may be mentioned that as interpreted for the purposes of this invention, "white" is to be regarded as a color.

As previously indicated, the drip coloring material preferably is applied to or incorporated in

2

the wick, all in a manner such that the candle may to all appearances resemble the ordinary candle. As the candle burns, the formation of colored or multi-colored drippings in contrast with the apparent coloring of the candle, is both very surprising and highly decorative.

In accordance with my preferred practice and embodiment of the invention, I impregnate the candle wick with any suitable coloring material, stain or dye, selected in keeping with the predetermined coloring of the drippings to be formed. It is particularly contemplated that as the candle progressively burns, a succession of different colored drippings shall form. For this purpose I apply to or impregnate successive lengths of the wick with, for example, analine or other suitable dyes of different colors, such as blue, yellow, green, orange, red, violet, etc. The sequence in the wick of the particular colors used may be selected for the most pleasing color effects in the successive formation and superposing of the drippings.

In order to prevent interblending of successive coloring materials carried by the wick and at the transition from one to the next color as the candle burns, the impregnated or coated lengths of the wick may be spaced apart. My preferred procedure is first to coat or impregnate successive spaced lengths of the wick with wax or other material preventing blending together of the dyes, and to impregnate the intervening uncoated lengths with the dyes. The wax-coated and dye-impregnated sections of the wick may have any desired lengths, typically in an average size candle, around one-half inch, which may be increased or decreased in accordance with the desired number and frequency of colored drippings to be formed. The wax body of the candle then is formed by any of the usual methods about the prepared wick.

As a further observation, it will be noted that spacing apart of successive color-impregnated sections of the wick results in the formation, while the wick is burning between those sections, of drippings having the color of the candle wax, which may add to the desired effects by the alternate superposing of such drippings on the wick-colored drippings.

The invention is further illustrated and described in connection with the accompanying drawing, in which:

Fig. 1 is an elevation view of the candle with the wick and impregnated sections appearing in dotted lines; and

Fig. 2 is a fragmentary enlarged sectional view of the candle.

The candle is shown to comprise a wax body 10 which may have the usual wax composition adapted to form a profusion of drippings as the candle burns, the body typically being built by successive dippings of the wick 11 in a melted body of the wax. Spaced segments 12 of the wick may be impregnated with a suitable material, such as a relatively high melting point wax, as and for the purposes previously described. Between these segments 12, the wax segments 13 may be impregnated with the suitable wax soluble dyes in whatever color sequence desired. Thus as the candle burns, the die carried by the wick segments 13 dissolves in the melted body wax, coloring the drippings overflowing down the side of the candle. The drippings formed as a result of extended burning of the candle, thus present a profusion of colors (preferably against the background of a white body wax) with highly ornamental and decorative effect.

It is desirable that in the application of dyes to successive lengths or sections of the wick, provision be made for preventing the dies from running or being drawn by capillarity longitudinally of the wick beyond the particular section to carry the coloring. For this purpose means is provided for physically stabilizing or confining each individual die to its particular wick section. By incorporating the dye in a relatively high melting point wax and applying the resulting melted mixture to the wick, the dye is effectively confined upon solidification of the wax. The wax may have sufficiently high melting temperature that when the wick is dipped in the melted wax to form the body of the candle, the color-containing wax will not melt or soften sufficiently to spread longitudinally of the wick, but will remain in and confine the coloring material to just that section of the wick coated or impregnated with the wax-dye mixture. It will of course be understood that various gums, resins or waxes of suitably high melting point to retain the coloring material may be used. As a further alternative, it is contemplated that the coloring material may be applied to the wick in a volatile solvent which, upon quick evaporation leaves the coloring material in a condition such that it will not run or will not be displaced by the wick capillarity during the candle dipping operation.

I claim:

1. A drip candle comprising a wax-like body, different wax-soluble dyes normally concealed within the interior of the body at different locations longitudinally thereof and normally undissolved in the wax of said body, said dyes dissolving in the melted wax of the body to form multi-colored drippings as the candle progressively burns.

2. A drip candle having a wax body and a wick containing a coloring material which dissolves in the wax as the candle burns to form drippings colored different from the normal exterior color of the candle.

3. A drip candle having a wax body and a wick containing different coloring materials which dissolve in the wax as the candle burns to form multi-colored drippings.

4. A drip candle having a wax body and a wick, spaced successive portions of which are impregnated with coloring material which dissolves in the wax as the candle progressively burns to color the drippings differently from the exterior color of the candle.

5. A drip candle having a wax body and a wick, successive portions of the wick being impregnated with different colored dyes which dissolve in the wax to produce multi-colored drippings as the candle progressively burns.

6. A drip candle having a wax body and a wick, successive portions of which are impregnated alternately with wax and different colored dyes which dissolve in the wax to produce multi-colored drippings as the candle progressively burns.

LESTER F. WILSON.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,701,844	Funke	Feb. 12, 1929
1,908,044	Nelson	May 9, 1933

Case No. 1-273 PH

Wilson vs. Manuel Kraus, Jr.

Pltf. EXHIBIT 1

Date MAR 20 1956 No. 1 IDENTIFICATION

Date MAR 20 1956 No. 1 IN EVIDENCE

Clerk, U. S. District Court, Sou. Dist. of Calif.

Deputy Clerk

PLAINTIFF'S EXHIBIT No. 5

LICENSE AGREEMENT

Parties

Licensor: Lester F. Wilson, of 554 W. Mission Drive, San Gabriel, California;

Licensee: Victrylite Candle Company, a corporation, 24 Lake Drive, Oshkosh, Wisconsin.

Recitals

A. Licensor is the owner of patent 2,464,361.

B. Licensee manufactures a line of candles charged by Licensor to infringe said patent.

C. An action charging infringement of said patent by Licensee is pending in the United States District Court for the Eastern District of Wisconsin, Civil Action No. 4904.

Consideration

The consideration for this agreement is comprised in the mutual covenants herein contained.

License Grant

1. Reserving in himself, his successors and assigns a single and indivisible right of manufacture, use and sale of candles embodying the invention of said patent, Licensor hereby grants to Licensee an otherwise exclusive license under said patent limited, however, to the manufacture, use and sale of candles having dyed cores as distinguished from dyed wicks and comprising at different points axially of the candle at least two different core colors. Candles which Licensee is authorized to manufac-

ture, use and sell as defined herein are hereinafter referred to as "licensed candles".

Royalty and Accounting

2. Licensee shall pay to Licensor by way of royalty one cent (1c) for each licensed candle sold by it.

3. On or before the fifteenth day of April, July, October and January, so long as this license remains in effect. Licensee shall render written reports to Licensor showing in each such report the total number of licensed candles sold by Licensee during the preceding calendar quarter. Each such report shall be accompanied by payment in full to Licensor of the royalty accruing to Licensor as provided in Section 2 hereof.

4. Licensee shall keep accurate books of account open during reasonable business hours to audit by a certified public accountant appointed by Licensor and accepted by Licensee, for the sole purpose of verifying reports made by Licensee to Licensor hereunder, no information contained in such books to be divulged by such accountant to Licensor beyond what is necessary to explain discrepancies, if any, between Licensee's reports and the actual number of licensed candles sold by Licensee.

Litigation

5. Final judgment in favor of Plaintiff-Licensor may be entered without costs by consent in the above entitled action, all claims for accounting and damages being waived by Licensor.

Duration

6. Unless sooner terminated, the license hereby conferred shall remain in full force and effect for the full remaining term of said patent.

7. In the event that Licensee is in default as to any of its obligations hereunder, Licensor may, at its option, and without waiver of any other rights it may have in the premises, terminate this license on sixty (60) days' notice, specifying in writing the particulars of the alleged default. If, within the sixty (60) days next following the service of any such notice, the Licensee complies with the agreement in the particulars of its alleged default, then, unless the default was deliberate, the agreement shall continue in full force and effect; otherwise, it shall terminate in accordance with the notice.

8. Licensee may, at its option, terminate this license at any time upon ninety (90) days' written notice to Licensor.

9. Licensor may, at his option, terminate this license by ninety (90) days' notice in writing following the expiration of any calendar year in which Licensee does not actually sell thirty thousand (30,000) licensed candles.

10. No termination of this license, however effected, shall relieve either party of obligations as accrued to the date of such termination.

11. Reports and notices directed by either party to the other under this agreement may be sent by registered mail, or delivered personally, to the respective parties at the addresses stated above, or

at such other addresses of which notice may from time to time be given.

Signed, sealed and delivered at Milwaukee, Wisconsin, this 18th day of April, 1950.

/s/ Lester F. Wilson,
Licensor

Victrylite Candle Company,
/s/ By W. Carter Best, Vice-Pres.,
Licensee

Witnesses:

/s/ Curtis B. Morrell
/s/ C. Leiden

PLAINTIFF'S EXHIBIT No. 6

ORANGE-LITE—Lester F. Wilson

Victrylite Royalties Beginning April 18, 1950

		Royalties		No. of Candles
1950	Second Quarter	63.44		
	Third Quarter	185.83		
	Fourth Quarter	591.65	840.92	84,092
1951	First Quarter	227.44		
	Second Quarter	129.52		
	Third Quarter	309.84		
	Fourth Quarter	1[illegible]4.70	1891.50	189,150
1952	First Quarter	609.81		
	Second Quarter	286.75		
	Third Quarter	687.05		
	Fourth Quarter	2346.63	3930.24	393,024
1953	First Quarter	595.79		
	Second Quarter	33.60		
	Third Quarter	56.21		
	Fourth Quarter	199.47	885.07	88,507
1954	First Quarter	34.85		
	Second Quarter	57.36		
	Third Quarter	107.76		
	Fourth Quarter	156.68	356.65	35,665
1955	First Quarter	15.15		
	Second Quarter	12.33		
	Third Quarter	29.07		
	Fourth Quarter	108.72	165.27	16,527
	TOTAL ROYALTIES		$8069.65	
	TOTAL CANDLES			806,965

Aug. 17, 1926. 1,596,017

M. E. HARNISCH

METHOD OF PRODUCING POLYCHROMATIC, DECORATED CANDLES

Filed March 10, 1925

Fig.1.

Fig.2.

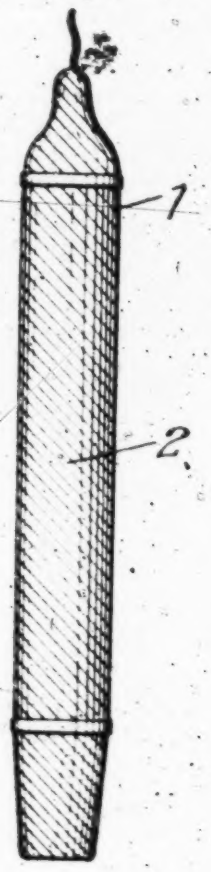


Fig.3.

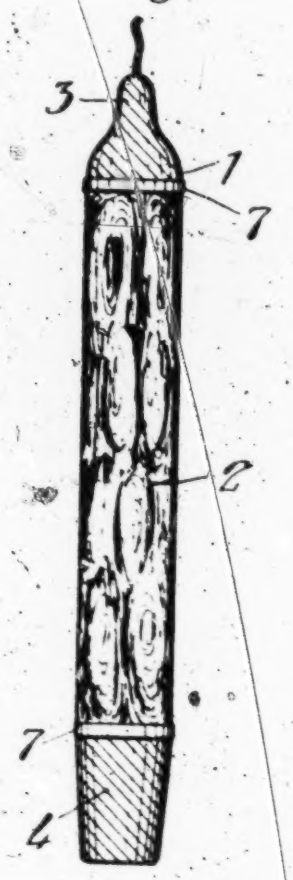


Fig.4.

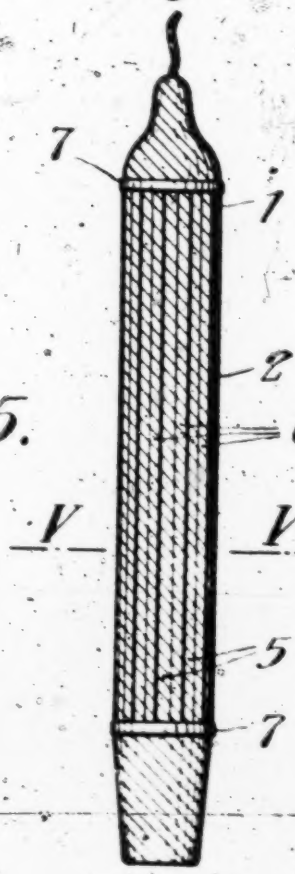
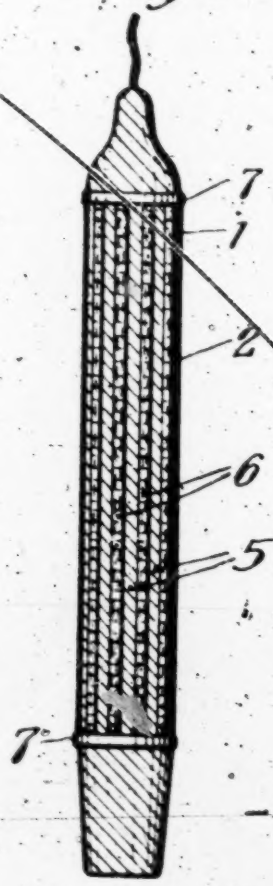


Fig.5.

Fig.6.



Inventor:
Marie Elfriede Harnisch
by Hubert E. R.
Attorney.

UNITED STATES PATENT OFFICE.

MARIE ELFRIEDE HARNISCH, OF FULDA, GERMANY.

METHOD OF PRODUCING POLYCHROMATIC, DECORATED CANDLES.

Application filed March 10, 1925, Serial No. 14,588, and in Germany February 10, 1925.

This invention relates to a method of producing candles with polychromatically decorated surfaces. The method consists in producing on the surface of the candle one or more colored layers and in removing a part of the uppermost colored layer or of several of said layers from some spots of the candle surface, whereby the lower differently colored layers are caused to show up, so that polychromatic designs appear on the candle surface.

The method can be performed in any desired manner. For instance, a paint or color, different from the base color of the candle is applied to the smooth candle surface, whereupon said colored layer, before being dried, is removed from some spots of the candle surface by means of the fingers or any other suitable device, so that the color of the basic material reappears.

Candles, which have been produced in the machine with uniformly deep grooves, are first homogenously dyed by immersing the same into a liquid dye (or subsequently in several liquid dyes). After the drying of said dye some layers of said grooves are removed by means of a suitable device, whereby polychromatic designs are produced. In the same manner also candles with smooth surface can be treated, so for instance by immersing said candles in liquid dyes and removing after the drying the colored layers to a more or less deep extent.

Further, the method can be performed in such a manner, that on the surface of the smooth plain candles recesses are produced by removing partially the candle material, whereupon the candles are brushed with the dye mass. This colored layer is immediately wiped off by means of a piece of cloth or the like, so that the color remains only in the engraved grooves, while the candle in the whole shows only a slight tint of tne color.

In the accompanying drawing, in which several modifications of candles produced according to my improved method are illustrated,

Figs. 1 to 3 shown one of said modifications in various states of treatment, while

Figs. 4 and 6 illustrate in the same manner the second modification and

Fig. 5 is a cross-section on line V—V of Fig. 4.

In the first modification Fig. 1 represents a candle 1 having the natural yellow color. This candle is immersed into green paint, so that the picture of the candle according to Fig. 2 appears, on the central shaft 2 of which the paint is wiped off on some spots by means of the fingers or by a rag, so that now the peculiarly colored candle according to Fig. 3 appears.

The upper end 3 as well as the longer end 4 of the candle can remain green, as shown in Fig. 3, or can be treated in the same manner as the shaft 2.

The ground- and cover-color or paints can be selected, of course, as desired.

In the modification according to Figs. 4 to 6 1 indicates again the candle, the central shaft 2 of which is provided with longitudinally extending recesses 5, between which the rips 6 are remaining.

The coloring of this candle is effected in such a manner that the originally naturally colored candle is dipped in green paint, so that the picture according to Fig. 4 appears. Thereupon the paint is removed from the raised surfaces 6 by means of a rag, so that the rips receive the natural yellow color, while the recesses 5 retain the green color.

The number and shape of the recesses in the shaft 2 can be as desired and they may have a round, triangular or square cross-section.

The collars 7 running around the candle can be provided with a different color, for instance gold-bronze.

The thus produced polychromatically decorated candles can be still further decorated or can be otherwise treated in a suitable manner. Also the described modifications of the subject matter of the invention can be combined with each other. The designs obtained by the method of the invention are distinguished by a vivid coloring and also by their tarsia- or mosaic-like appearance.

I claim:

1. A method of producing polychromatically decorated candles, which method consists in producing on the candle surface one

or more colored layers and then removing, after said layers have been dried, some parts of the individual layers or of several layers at certain spots of the candle surface.

2. A method of producing polychromatically decorated candles, which method consists in producing on the candle surface which is provided with uniformly deep grooves, one or more colored layers and then removing after said layers have been dried some parts of the individual layers or of several layers at certain spots of the grooves.

In testimony whereof I affix my signature.

MARIE ELFRIEDE HARNISCH.

Nov. 30, 1926. (p. 343) 1,608,518

W. MINRATH

MEANS FOR GENERATING COLORED LIGHT FOR ILLUMINATION PURPOSES

Filed Oct. 15. 1923

Fig. 1.

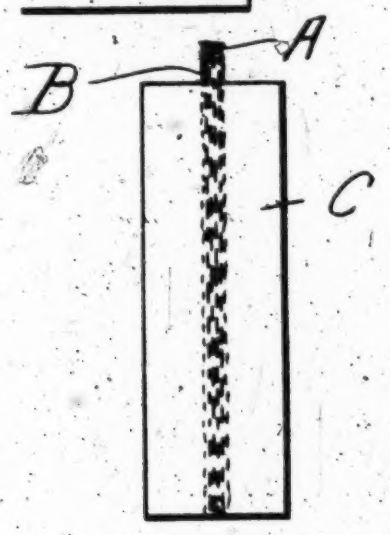


Fig. 2.

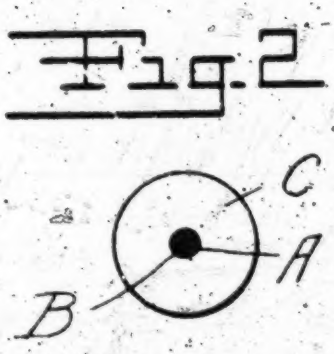


Fig. 3.

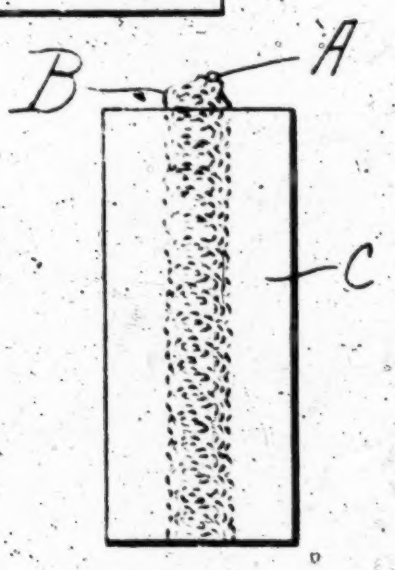


Fig. 4.

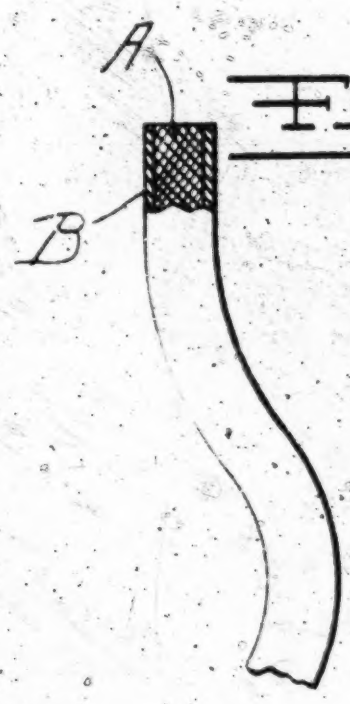
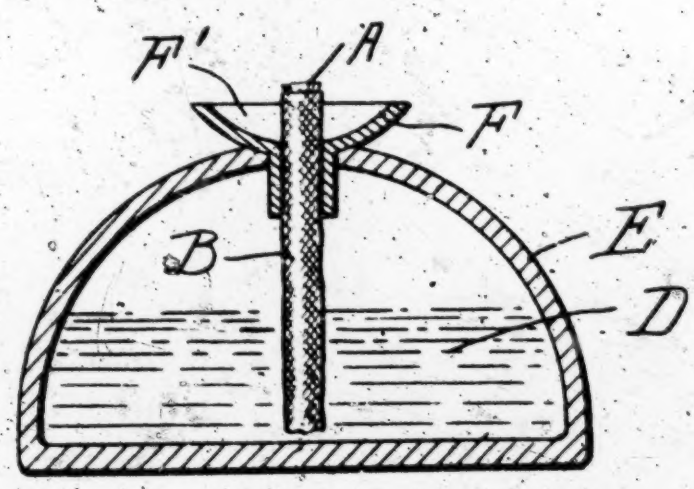


Fig. 5.



INVENTOR
William Minrath
BY
Frank H. Ashley
ATTORNEY

PLAINTIFF'S EXHIBIT No. 10

17 April 26, 1950

Registered mail

Muench-Kreuzer Candle Co.
Syracuse, New York

Gentlemen:

My client, Mr Lester F. Wilson, has informed me that you are making and selling, or selling, multiple color drip candles, which according to our examination of samples sold as "Make-a-Rainbow Candles", are clear infringement of the Wilson patent No. 2,464,361, a copy of which is enclosed herewith.

You are requested to discontinue all infringements of the Wilson patent. This matter should receive your prompt attention.

An early expression of your intentions will be appreciated.

Very truly yours,

HCW jso
enc. Patent No. 2,464,361

PLAINTIFF'S EXHIBIT No. 11

[Letterhead of Muench-Kreuzer Candle Co., Inc.]

May 3, 1950

Mr. H. Calvin White, Attorney
Richfield Bldg.,
Los Angeles, Calif.

Dear Mr. White:

We wish to acknowledge your letter of April 26 regarding the claimed infringement of our "Make-A-Rainbow" Candles on the patent held by Mr. Lester F. Wilson. We are referring this matter to our Patent Attornies, Bodell and Thompson, for investigation. Mr. Bodell will undoubtedly write you after he has looked into the matter.

Very truly yours,

Muench-Kreuzer Candle Co., Inc.,
/s/ By Norbert C. H. Muench

NM:b

PLAINTIFF'S EXHIBIT No. 15

[Letterhead of Orange-Lite]

Number of Magi-Color Drip Candles Sold

Year	1945	Total Candles	42,048
Year	1946		47,142
Year	1947		158,544
Year	1948		166,488
Year	1949		193,233
Year	1950		393,672
Year	1951		475,692
Year	1952		421,326
Year	1953		269,772
Year	1954		226,800
Year	1955		189,648

DEFENDANTS' EXHIBIT "A"

PRIOR ART PATENTS

1,596,017—M. E. Harnisch—August 17, 1926

1,608,518—W. Minrath—Nov. 30, 1926

1,701,844—Philip K. Funke—February 12, 1929

1,908,044—Edwin F. Nelson—May 9, 1933

2,184,666—W. M. Fredericks—December 26, 1939

2,196,509—C. Turner—April 9, 1940

Gr. Britain
95 —Arthur C. Sterry—January 13, 1871

Gr. Britain
122 —Arthur Field—January 18, 1871

Gr. Britain
3478 —Fields Spec.—Jan. 18, 1871

Gr. Britain
5902 —Wm. C. Smith—January 22, 1898

German
157,209—Dr. O. Hausamann—June 30, 1903

Patented Nov. 30, 1926. 1,608,518 (P. 344)

UNITED STATES PATENT OFFICE.

WILLIAM MINRATH, OF NEW YORK, N. Y.

MEANS FOR GENERATING COLORED LIGHT FOR ILLUMINATION PURPOSES.

Application filed October 15, 1923. Serial No. 668,577.

My invention relates to the art of illumination, and the object of my invention is to provide means whereby colored light may be generated for advertising purposes or for use on gala occasions. It is also of advantage for use in certain scientific research work.

In carrying out my object I may use a lamp construction as hereinafter set forth, but for many uses I prefer to provide a candle made with the materials combined in such manner as to provide the desired color when burned.

Referring to the drawings which form a part of their specifications:

Figure 1 indicates a candle shown in vertical section.

Figure 2 is a plan view of said candle.

Figure 3 is an illustrational view showing a wick formed in helical shape to provide a greater amount of the chemical used to generate the color in a candle of a given length.

Figure 4 illustrates the wick which may be made and sold as a separate article of manufacture.

Figure 5 is a vertical sectional view of a lamp illustrating the use of the wick when used with oil, etc.

A, indicates a wick made of cotton or other suitable material such as usually found in ordinary candles.

B, indicates a coating or envelope of wax or paraffine.

C, indicates a body portion of combustible material such as wax or paraffine.

In providing the wicks I use certain chemicals depending upon the color to be generated when the candle is burned.

To generate a red color I prefer to use strontium chlorate and for a green color barium chlorate, which I have found to be much superior to other salts which I have tried. Both of these salts are soluble in water and I therefore make a saturated solution of the desired salt and then soak the wicking therein and allow it to dry thus causing the crystals of the salt to form in the wick.

I also prepare some wax or paraffine and melt the same and then add the salt thereto to provide a paste rich in the chemicals and while still warm I cover the wicking with a coating of this paste. I then cut the wicking into the lengths corresponding to the length of the candle to be made, or slightly longer, and pack them in boxes for sale.

To make the complete candles, I take the wicks as above finished, and mold the body portion of wax or paraffin around each wick in the usual manner of making wax candles.

In Figure 3 I have shown the wick made in the form of a helix to provide a greater amount of the chemical, thereby generating a more intense or deeper color in the flame of the candle.

In Figure 5 I illustrate a simple lamp construction in which E indicates the receptacle for oil, D the oil therein, and F a holder to support the wick A, the cup F' serving to hold any overflow or dripping of oil.

It is obvious that a mixture of barium and strontium could be used instead of either of said salts separately to provide a colored light and that other such salts or suitable compounds may be used to provide light of many different colors and shades of color.

Having thus described my invention I claim as new:—

1. An article of manufacture comprising a cellulose wick impregnated with a chlorate salt solution crystallizable upon drying and when ignited producing a colored flame.

2. An article of manufacture comprising a cellulose lamp wick impregnated with a chlorate salt solution crystallizable upon drying and forming a coating on the wick to produce a colored flame when ignited.

3. A color emitting candle comprising an inflammable body, a wick embedded in said body, said wick being impregnated with a chlorate salt solution crystallizable upon drying.

4. A color emitting candle comprising an inflammable body, a helical formed wick in said body, said wick being impregnated with a chlorate salt solution crystallizable interiorily and exteriorly of said wick upon drying.

5. The process of making a wick to provide colored light consisting in dipping a wick into a chlorate salt solution, then drying the wick to cause said salt to crystallize in the wick, then coating said wick with combustible material.

6. The process of making a wick to provide a colored light which consists in dipping a wick into a chlorate salt solution, drying the wick to cause the salt to crystallize and then coating the wick with a combustible paste containing a quantity of the said salt solution.

7. The process of making a wick to provide a colored light which consists in dipping a wick into a chlorate salt solution which may have as its characteristic element either barium or strontium, drying the wick to cause the salt to crystallize and then coating the said wick with a combustible paste containing a quantity of the said solution.

In testimony whereof, WILLIAM MINRATH has signed his name to this specification this second day of October, 1923.

WILLIAM MINRATH.

Patented Feb. 12, 1929. 1,701,844

UNITED STATES PATENT OFFICE

PHILIP K. FUNKE, OF ALAMEDA, CALIFORNIA.

CANDLE.

No Drawing. Application filed January 30, 1925. Serial No. 5,902.

My invention relates to improvements in candles and more especially to that type of candles which burn with a colored flame.

An important object of my invention is to provide a device of the above mentioned character in which the flame is colored to correspond to the odor or perfume that the candle gives off when burning.

Heretofore it has not been possible to color the flames of ordinary candles consisting of paraffin, ceresin, etc., but I have discovered that with the use of inorganic wax, such as paraffin, combined with certain acids, such as stearic and palmitic, in combination with certain chemicals, a candle may be produced that will burn with a colored flame.

I contemplate adding aromatic oils and perfume bases to the candle in the process of manufacture in such manner that odor will be produced without smoke.

These candles will be colored to indicate the odor they will emit while burning, as for example, a candle that would give a lavender odor would be dyed lavender.

I also contemplate coloring the flame of the candle to indicate the odor to be emitted.

I also intend indicating the color of the flame of a candle by dyeing it that color.

For coloring the flame I intend using paraffin mixed with stearic acid agitated with air, which when mixed with certain chemicals will produce colored flames. The several chemicals that will give the candle flame the desired color will be mixed with the inorganic wax in the proper proportions (paraffin 75% and stearic acid 25%) or they may be incorporated in a specially prepared wick woven from long staple cotton to hold the chemicals contained in solution in which the wick will be immersed, and then dried, the wick being larger than the usual wick to permit it to absorb enough of the solution containing the flame coloring chemicals to properly color the flame. In making the candle, the mixture of paraffin 75% and stearic acid 25% is melted, and when cool, but before it hardens, is agitated with compressed air which leaves the mixture light in weight and porous, allowing it to burn rapidly.

To obtain a red candle, red aniline dye is added to the liquid wax stearic acid mixture and one-half of one per cent oil of rose geranium is also added at the same time. To obtain a red flame the wick which has been saturated in a solution of 25 parts strontium nitrate, 15 parts potassium chlorate, 4 parts antimony sulphate, and 13 parts sulphur, is placed in the center of a candle mold and the cooling mixture of paraffin and stearic acid, is then poured into the mold around the wick and cooled rapidly. In order to improve the color of the flame, 2½% of a mixture of the dry chemicals specified above may be added to the paraffin and stearic acid at the time the aniline dye and the rose geranium oil are mixed.

I may use, for example, to obtain a blue colored flame, a combination of potassium nitrate 8 parts, liquid sulphur 4 parts, and copper sulphate 4 parts. The specially prepared wick will be immersed in a solution (10%) of equal parts nitrate of potash and copper sulphate. The chemicals themselves will be mixed with the candle base in sufficient amounts to get the proper color flame for example 2½%, as set out above.

To obtain a red flame I may use strontium nitrate, 25 parts, potassium chlorate, 15 parts, antimony sulphate, 4 parts and sulphur, 13 parts, saturating the wick in a solution (10%) of equal parts strontium nitrate and potassium chlorate.

The chemicals above mixed with the candle base (paraffin and stearic acid) and used for saturating the wicks are for producing the colored flames. The color of the candle itself will be made with aniline dye.

As an example, a candle colored with purple aniline will contain essential oil lavender, which will diffuse odor as the candle is consumed, or a candle will be colored red with aniline and combined with essential oil rose geranium.

These essential oils are very volatile and fragrant, being evaporated as the candle burns. The heat generated by the burning of the candle will vaporize the oils before they can be consumed by the flame because of their volatility and consequently, odor will be produced without smoke.

It is to be understood however that I do not restrict myself to these combinations of chemicals, or colors, but may resort to various changes without departing from the spirit of my invention or the scope of the subjoined claims.

Having described my invention what I claim and desire to protect by Letters Patent is:

1. A candle having an incense incorpo-

rated therein, said candle being dyed with a color known by a term which also designates the incense in the candle.

2. A candle of inorganic wax and a fatty acid, said candle having salts incorporated therein to produce a colored flame, said candle being dyed the same color as that adapted to be imparted to the flame by the salts.

3. A candle of inorganic wax and a fatty acid, an incense incorporated in said candle, and salts incorporated in the candle and adapted to impart a color to the flame of the candle, said color being known by a term which also designates the kind of incense in the candle.

4. A candle of inorganic wax and a fatty acid, said candle having an incense incorporated therein, and salts incorporated in said candle and adapted to impart a color to the flame of the candle, said color of the flame being known by a term which also designates the kind of incense in the candle, said candle being dyed the color imparted to the flame by the salts.

In testimony whereof I affix my signature.

PHILIP K. FUNKE.

Patented May 9, 1933 1,908,044

UNITED STATES PATENT OFFICE

EDWIN F. NELSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO UNIVERSAL OIL PRODUCTS COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF SOUTH DAKOTA

ART OF MAKING CANDLES

No Drawing. Application filed July 29, 1929. Serial No. 382,087.

This invention relates to an improvement in the art of making candles from solid combustible materials which are capable of being melted and molded, such as solid paraffin hydrocarbons, vegetable waxes, animal fats, or mixtures of these materials.

The art of making candles has been brought to a high state of perfection, especially in the proper blending of combustible solid wax-like materials for making the body of the candle. As is well known, a candle consists of two component parts, namely, the body and the wick.

At the present time candles are made in various colors, using proper dyes and pigments. The purpose of this color in the material is purely ornamental, the color chosen by the prospective user depending mainly upon the occasion for which the candle is to be used and the personal choice of the user. In like fashion, candles have been made up with perfumes or other materials of pleasant odor, which are disseminated when the candle is burned.

It is the purpose of the present invention to impart a distinctive color to the flame. In this manner it is possible to have all color combinations, e. g., to have the color of the candle match the color of the flame, or to have a candle of one color and a flame of another, thus adding greatly to the artistic value of the candle. As will be later described, it is possible to have a candle which will burn with a varied colored flame, changing as the combustion progresses.

It is well known in the art of pyrotechnics that certain compounds impart a definite color to a flame, particularly salts of the various metals. Usually the color of the flame is a function of the metallic element of the salt rather than the acid radical.

To cite a few examples of a great variety of salts which can be used in connection with the present invention, strontium salts, e. g., chloride, nitrate, sulfate, give a scarlet flame; barium salts give a green flame; potassium salts produce a violet flame; copper halides give an azure flame; zinc salts produce a white flame; selenium salts produce a light blue flame; calcium salts produce a brick red flame; sodium salts produce a bright yellow flame of a more definite and intense yellow than an ordinary flame.

It is proposed to make use of this property of the various salts in the present invention by incorporating salts either in the body of the candle or in the wick. In accomplishing this object, the material composing the body of the candle is melted and the salt in a finely divided state is added while stirring; this mixture may then be used for making up the candle by molding or otherwise. As an alternative, the wick may be saturated with a concentrated solution of the salt and then dried. Either of these methods, or both, may be used in making up the candle.

While I specifically refer to the use of salts for making these candles, I do not wish to be limited to their use as other materials may be used for producing the desired effects, e. g., the elements themselves, potassium, sodium, calcium, strontium, etcetera will give the corresponding colors of the salts, and finely divided metals give particular effects, e. g., aluminum will give a bright white light, with perhaps scintillating particles being given off from time to time; magnesium is another metal which may be used to obtain similar effects.

Having now given the principal objects of the present invention, I will describe a specific example illustrative of the invention.

Paraffin wax or a mixture of paraffin wax with a small percentage of stearic acid or bees-wax is melted and 1%, more or less, of finely ground strontium nitrate may be added thereto. The wick of the candle may be immersed in a saturated solution of strontium nitrate and properly dried. The candle is then prepared by the usual manner of manufacture, e. g., placing the wick in position and pouring the molten material into the mold or any other improved method of manufacture.

If it is desired to make a candle which will burn with a vari-colored flame, the candle may be built up in sections from mixtures containing salts which give vari-colored flames, e. g., one-third of the candle

Dec. 26, 1939. W. M. FREDERICKS 2,184,666

(P.350)

COLORED FLAME CANDLE

Filed Sept. 28, 1936

Fig 1

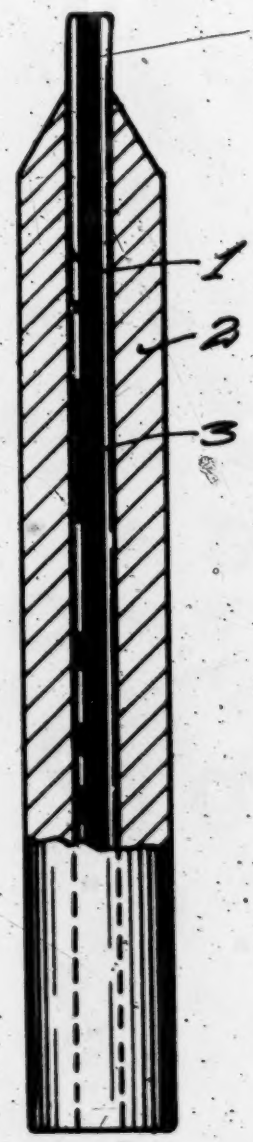


Fig. 2

INVENTOR.
William M. Fredericks
BY Glenn L. Fish
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,184,866

COLORED FLAME CANDLE

William M. Fredericks, Spokane, Wash.

Application September 28, 1936, Serial No. 103,025

4 Claims. (Cl. 67—22)

This invention relates to a colored flame candle and consists in applying color-producing metallic salts to the candle wick in a limited straight and a spirally extending path, with the aid of one or more vehicles in such manner that when the candle is lighted it burns with a colored flame.

My invention also consists of incorporating the color-producing metallic salts in the candle mass, by the use of one or more of the same vehicles, as hereinafter set forth.

The invention is illustrated in the accompanying drawing wherein:

Fig. 1 is a view showing a candle of the improved construction partially in longitudinal section and partially in elevation.

Fig. 2 is a view similar to Figure 1 showing a candle of a modified formation.

The vehicles used in my invention consist of such products as petrolatum, liquid paraffin, oils, fats, glycerol, ethylene glycol, greases, waxes, glues, alcohols, esters, and the like, or mixtures thereof.

When applying the color-producing metallic salts to the wick 1 of the candle 2, a continuous or a discontinuous ribbon, film, layer or deposit of one or more of the above named vehicles is applied to a limited portion of the wick by suitable means. The color-producing metallic salts are now affixed to the vehicle bearing wick as shown at 3 by contact therewith as by dipping the wick into the metallic salts, by spraying the metallic salts onto the wick, or by any other suitable means, it being understood that the color producing salt crystals will be retained only upon the limited portion of the wick to which the vehicle has been applied.

In Figure 1 the strip of color producing salt crystals follows a spirally extending path about the wick whereas in Figure 2 the color producing salts extend in a straight path along the wick. In neither example do the salts extend entirely about the wick at any point in the length of the wick.

The purpose of the vehicle is to affix and to help retain the color-producing metallic salt on the wick, as well as to later aid in bringing the metallic salt into contact with the candle flame, and to help release the flame-coloring properties of the metallic salts.

The candle wick may or may not be previously waxed, as by dipping it into hot paraffin or other wax. In some cases by dipping the wick into hot paraffin or other wax previous to applying another vehicle, it helps to maintain the candle flame against the damping effects of the color-producing metallic salts.

The candle wick carrying its deposit of one or more of the vehicles named above, is given its quota of color-producing metallic salts, either in the dry or moist state, or otherwise; which union may, or may not, later form a chemical combination, before or after the candles have been manufactured. As an example: Glycerol used as a vehicle on the wick, to which strontium chloride is applied, may form a chemical combination, or start to, after union on the wick; while petrolatum used as the vehicle, to which strontium chloride is applied, may not. The same may be said of other vehicles and metallic salts.

The color-producing metallic salts may also be applied to the vehicle-bearing wick, as a saturated or an unsaturated salt, or as a dissolved or a semi-dissolved salt of one or more of the above named vehicles. As an example: A glycero-salt of sodium chloride, or potassium chloride, or an alcoholate of sodium or potassium.

The color-producing metallic salts may also be applied to the dry candle wick in the form of a paste, which can be made by mixing the metallic salts with small amounts of one or more of the above named vehicles, as for example: A petrolatum paste containing cupric chloride etc. etc.

The candle wick, treated as above outlined, and other variations thereof, and which has its quota of vehicle and metallic salts, is now dipped in paraffin or other wax which is now allowed to cool and set so as to seal them preparatory to making the desired size candle by dipping or pouring, or other regular method of manufacture.

The amount of color-producing metallic salts applied to the wick may vary from a trace up to an amount sufficient to produce the intensity of color desired, and they may be applied to the wick in a continuous or a discontinuous manner, or alternately, so as to produce one single color, or an intermittent single color, as desired or may be applied alternately so as to produce several separate colors in the same candle, according to the color effect desired. As an example: A blue colored flame, followed by a red one, and then a yellow flame.

The color-producing metallic salts may be applied to the wick, either as separate colors by the use of single metallic salts; or as mixed colors by the use of mixed salts; or by alternate layers of the different metallic salts so as to produce mixed colors in the flame, which may or may

may be made up with strontium salts, the second third with zinc salts, and the last third with a mixture of copper chloride and potassium salts. The candle itself may be of any desired color, e. g., the top third may be red, the intermediate third white, and the bottom third blue; the flames will correspond substantially to the colors of the sections, namely, red, white and blue.

In using salts and metals for the purpose of the present invention, where they are incorporated into the body of the candle, a trace to approximately 2% of the salt or metal used relative to the candle body on the basis of weight will give the desired result.

The above description is sufficiently clear to illustrate the wide scope of the invention and to show its application as an artistic and useful development.

I claim as my invention:

A candle adapted to burn with a varicolored flame, said candle being built up in sections of different color, each section containing a substance which imparts to the flame when the candle is lighted a color corresponding to the color of such section.

In testimony whereof I affix my signature.

EDWIN F. NELSON.

not be separated by alternate dippings or by layers of paraffin or other waxes.

I shall now describe a few of the colored flame candles which may be made in accordance with my invention.

The single color type: If a candle burning with a red colored flame is desired, a wick similar to those now in use, or any suitable wicking, is first dipped into hot paraffin or other wax. Over this waxed wick is applied a continuous film or layer or other deposit of warm petrolatum by drawing the waxed wick through the petrolatum. The wick so prepared is now dipped in crystals of strontium chloride, so that a continuous attachment of the strontium chloride salt is made on one side of the wick, and in medium proportions, for the full length of the wick. The wick is now dipped into paraffin or other wax, which seals in the petrolatum and the strontium chloride salt. It is now allowed to cool and set, or it may be dipped in the paraffin or other candle material bath, and be brought up to size, as in regular candle manufacture. The salt is applied only on one side of the wick instead of entirely about the same in order that an uncoated portion of the wick will be provided for melted wax to be drawn upwardly thereon. If the uncoated portion were not present the salt solution would form a clinker around the wick and quench the flame.

The alternate color type: If a candle burning with alternate blue, followed by red, followed by yellow colors is desired, apply glycerol to the wick on one side for the length of the distance to which it is desired to burn the blue and red colored flames. Now dip the wick into cupric chloride crystals for the distance determined for the blue colored flame, and then dip the wick into strontium chloride crystals onto that part of the wick reserved for the red colored flame. Now dip the entire wick into melted paraffin, etc. so as to seal these salts, and the vehicle onto the wick. Now draw the paraffined remainder of the wick which has been reserved for the yellow color, through a saturated glycerol and sodium chloride salt mixture, and dip the part of the wick on which has been applied the yellow burning metallic salt, into the paraffin, etc., so as to seal in this last application. Now proceed to manufacture the candles in the regular manner, being careful that the last coating of paraffin has set sufficiently for safe handling of the wick.

The mixed color, or multicolor type: A red, white and blue colored flame candle can be made in the following manner: Draw the wick through warm petrolatum for the entire length of the wick, and then dip the wick into cupric chloride crystals so as to have a continuous attachment of the crystals to one side of the wick in medium amount for the entire length of the wick. Now dip the entire wick carefully into melted paraffin which is not too hot, so as to seal in and onto the wick the blue color producing metallic salt. While still warm, the wick is again drawn through warm petrolatum, and it is now dipped into strontium chloride crystals, so as to have a continuous attachment on one side of the wick, in medium amount, for the entire length of the wick, and on top of the blue color producing metallic salt. The entire wick is again dipped into melted paraffin to seal in this last application of the red color producing metallic salt. The wick is then allowed to cool and set, or with care, one can immediately proceed to manufacture the candles in the regular manner.

In most instances, the same good results may be obtained, by substituting glycerol for petrolatum and vice versa, or of either one of these for most any other of the group of vehicles named herein, in one way or another. The above illustrations are made merely to show one method of getting satisfactory results, in the manufacture of colored flame candles, by applying the vehicle and the color-producing metallic salt to the wick of the candle.

The metallic salts are applied to a limited portion of the surface of the wick only, on one side of a flat or braided wick, or applied to a round wick in a spirally extending path, as by twisting the wick when passing it over an applicator such as a roller type moistener.

The untreated portion of the wick, about one-fourth to one-half its surface, is left free of salts as an open channel along the wick through which the melted candle material keeps feeding the flame, thus preventing an accumulation or crust of metallic salts on the wick which would extinguish the flame, as often happens when the wick is completely encircled or covered with metallic salts.

At no time is the wick impregnated, soaked or saturated in an aqueous or other solution or mixture of metallic salts, as is followed in the prior art.

The purpose of the wax seal is to prevent the untreated portion of the wick from becoming impregnated or saturated with the metallic salts, as well as to retain the vehicle bearing the metallic salts on the wick.

When incorporating the color-producing metallic salts in the candle mass, use is also made of the vehicles named herein, the purpose of which, in this case, is to help release the flame coloring properties of the metallic salts.

As an illustration: Should a red colored flame be desired, a metallic salt such as strontium chloride or lithium chloride is dissolved in one of the vehicles, such as an alcohol, to a saturated solution. In this saturated solution is dissolved another vehicle such as oleic or stearic acids to the saturation point by heating. To the melted candle material, such as paraffin or stearin, or their combinations, as well as the other candle materials or their combinations, which are named herein, is added a small amount of the saturated combination, in small quantities, according to the amount of color desired in the flame, and intimately mixed therewith. This mixture lends itself better to types of candles which are cast or poured into molds.

Another variation in making these candles, is the addition of an alcoholate of such metals as sodium, for a yellow colored flame, or potassium for a lavender colored flame. The alcoholate is incorporated into the candle mass in small amounts, according to the amount of color desired, but not to exceed 5%. The candle material is then poured or cast into molds, as in regular candle manufacture.

The above named candles may be made with or without a coating of metaldehyde.

The color-producing metallic salts I use in my colored flame candles, are the halides, nitrates, nitrites, acetates, oxysalts, ammoniates, chlorates, perchlorates, alcoholates, oxides and hydroxides and other salts of

Sodium, potassium, lithium, boron, thorium, strontium, iron, copper, calcium, barium, cerium, and also powdered aluminum and magnesium (metallic).

My invention may be used with any burnable

material from which candles can be manufactured. As an example of a few:—Paraffin and other waxes; spermaceti; barberry; stearic, oleic and other fatty-acids and mixtures thereof; esters of amino or imino-acids, and other esters; ethyl carbamate; ethyl or methyl oxalate, and the like, or mixtures thereof.

Having thus described the invention, what is claimed as new is:

1. The method of making a candle burning with a multi-colored flame consisting of applying a vehicle bearing a metallic salt to a wick for the entire length of the wick without extending entirely about the wick at any point in its length, applying a wax seal to seal the untreated portion of the wick and the salt; applying a vehicle having a salt producing a flame of a different color to the wax encased wick, on top of the first application of wax, coating the last application of salt and the first mentioned wax with a coating of wax to form a seal, and building up the candle with an outer jacket of wax to predetermined size.

2. A candle comprising a wick, metallic salts extending along the wick in a path extending spirally about the wick, a coating of wax to seal the untreated portion of the wick, and a combustible body about the wick and metallic salts.

3. A candle comprising a wick, a combustible body, and a continuous application of a saturated metallic salt solution in a nonaqueous vehicle extending along the wick but not impregnating or saturating the wick, the candle burning with a colored flame when lighted.

4. A candle comprising a wick, a combustible body, and a continuous application of a paste of metallic salts in a nonaqueous vehicle extending along the wick the full length thereof without encircling the wick at any point, the candle burning with a colored flame when lighted.

WILLIAM M. FREDERICKS.

April 9, 1940. C. TURNER 2,196,509

(P. 354)

MULTIPLE CANDLE

Filed April 1, 1939 2 Sheets-Sheet 1

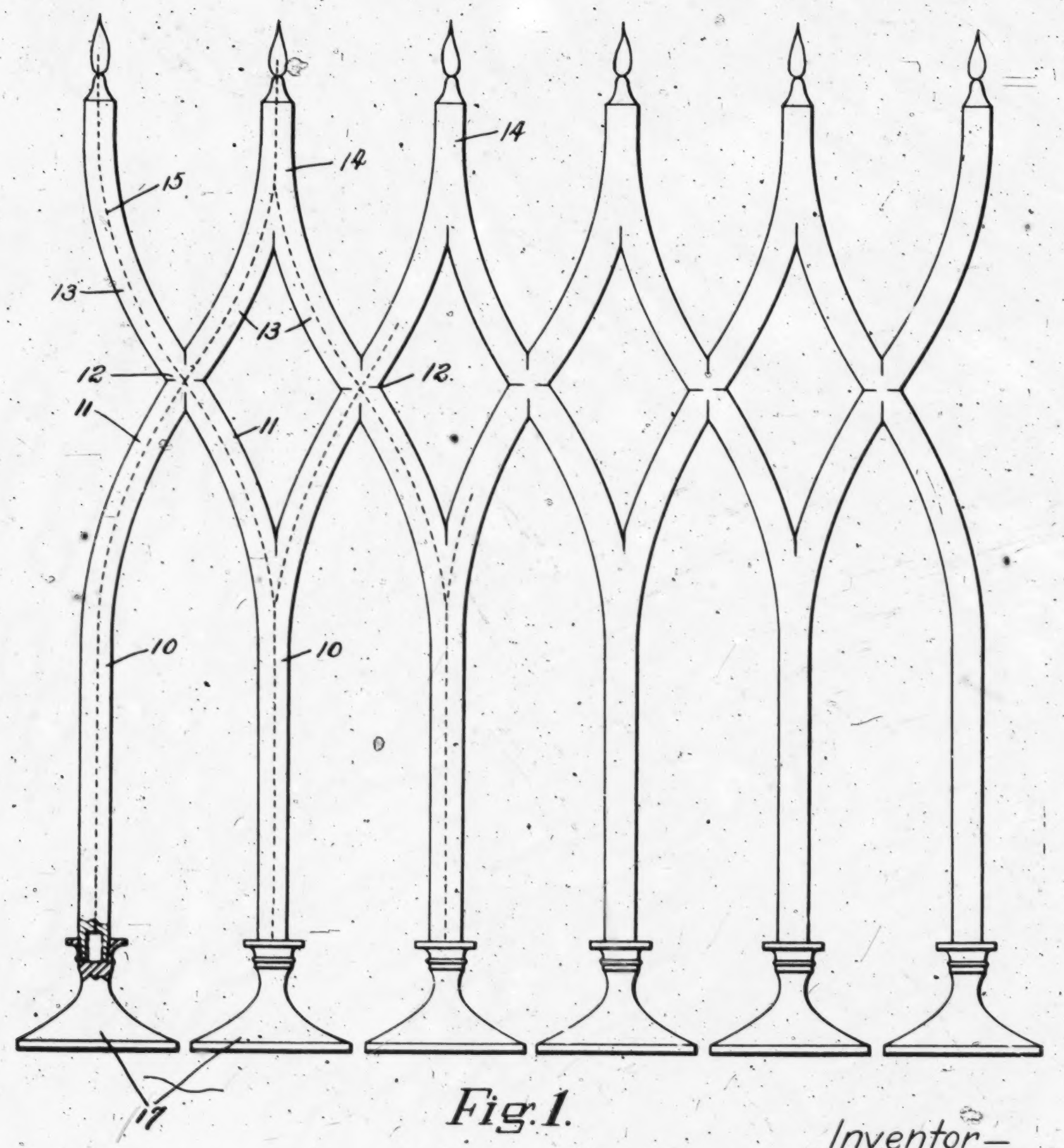


Fig. 1.

Inventor—
Cameron Turner.
by Conway & Witter. Attys.

April 9, 1940. C. TURNER 2,196,509

(P.355)

MULTIPLE CANDLE

Filed April 1, 1939 2 Sheets-Sheet 2

Fig. 2.

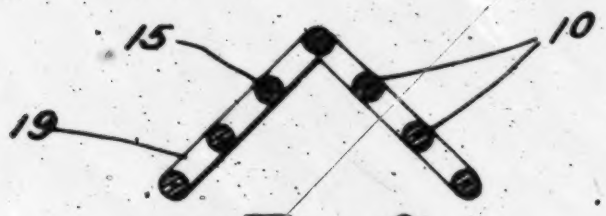


Fig. 3.

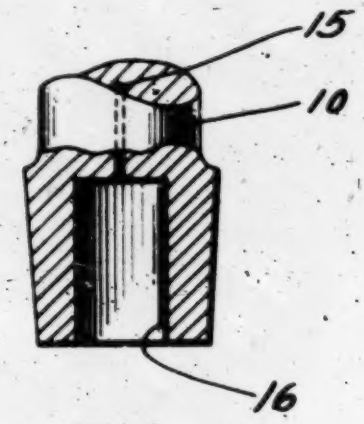


Fig. 4.

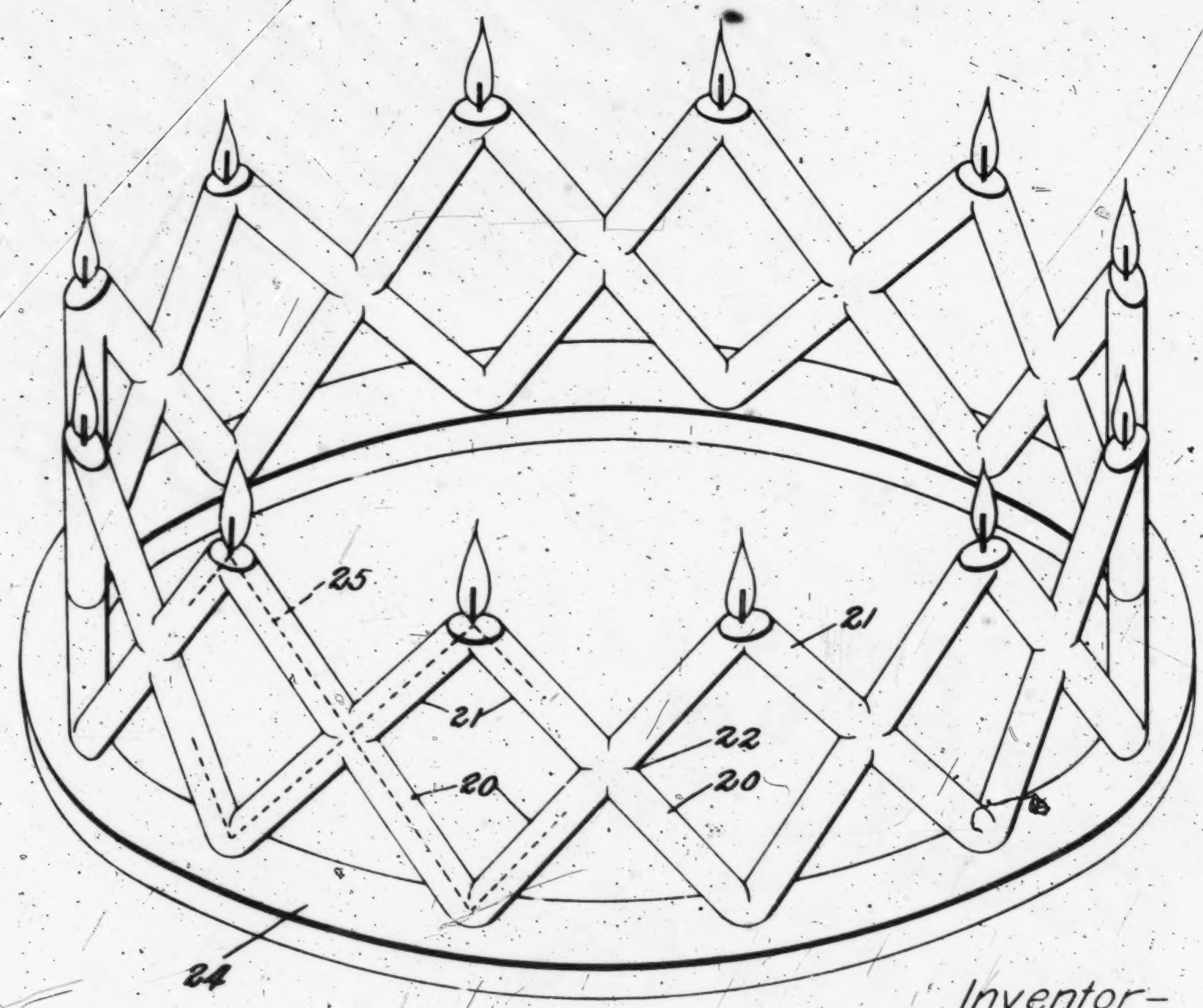


Fig. 5.

Inventor-
Cameron Turner.
by J Kenway & Wilkinson Atty

UNITED STATES PATENT OFFICE

2,196,569

MULTIPLE CANDLE

Cameron Turner, Beverly, Mass.

Application April 1, 1939, Serial No. 265,469

9 Claims. (Cl. 67—22)

This invention relates to candles and consists in an improved candle of multiple construction presenting novel and ornamental characteristics in itself and adapted to burn with a varying number of flames in a manner not heretofore known.

The candle of my invention has in its structure an integral body presenting a trunk portion with diverging branches and a wick or wicks running through these portions. My invention may be embodied in candles of many different forms. Reduced to its lowest terms it comprises a candle having diverging wick-containing branches springing from a common point of intersection. The wick in both branches may be ignited and will burn with two separate flames down to the point of intersection and when this is reached the two flames become a single flame. The candle may include in an integral body a series of trunk portions each with diverging arms and is thus adapted to burn at one level with flames in each branch and at a lower level with only one half the number of flames. If desired the branch portions may be shaped to converge to a second or higher point of intersection and to enclose an opening or openings of ornamental contour.

Broadly speaking my invention contemplates any candle structure presenting trunk and branch portions enclosing wicks and merging and separating so as to burn progressively with a variable number of flames. The elements of the candle may be arranged horizontally in a straight line or upon a curve or a circle or in any desired angular figure according to the use for which the candle is desired, and here again I contemplate a wide field including candles for ecclesiastical uses, table or interior decoration, illumination for birthday cakes, and other uses where special shapes or contour may be appropriate.

These and other features of the invention will be best understood and appreciated from the following description of several preferred embodiments thereof selected for purposes of illustration and shown in the accompanying drawings in which:

Fig. 1 is a view in elevation of a candle having six trunk portions arranged in a straight line,

Figs. 2 and 3 are plan views, partly in section, suggesting curved and angular arrangements of the elements of the candle,

Fig. 4 is a fragmentary view of one of the candle bases, and

Fig. 5 is a view in perspective of a circular candle.

The candle shown in Fig. 1 comprises an integral body including six parallel spaced trunk portions 10 each of which merges into a branch or a pair of diverging branches 11 curved and intersecting at the points 12 in a pattern suggesting a series of pointed arches. The branches cross over or again diverge above the points of intersection 12 in intermediate branch portions 13 and these portions again converge to form a series of six tip portions 14 each located symmetrically above one of the trunk portions 10 intersecting or branching as the case may be wherever the candle changes from trunk to branch portions or where the branch portions intersect. The candle as a whole may be supported in any desired manner, but as herein shown single candle sticks 17 are provided, one for each of the trunk portions 10.

While the candle shown in Fig. 1 represents merely one embodiment of my invention and may contain as many or as few sections as desired, attention is called to the general ornamental and decorative effect secured in the illustrated embodiment of the invention. The pointed arch and diamond opening effect are particularly appropriate in candles for use in buildings of a gothic style of architecture.

In addition to this pleasant ornamental effect the construction is useful in a novel function; that is to say, in providing a variable number of flames as it burns down. When first lighted the candle of Fig. 1 presents a row of six flames. When it has burned down into the sections 13 it presents a row of ten flames, and this number is diminished to five at the level of the points of intersection 12. Below this point the candle again presents a row of ten flames and when the trunk portions are reached it presents a row of six flames.

The trunk portions 10 are shown in Fig. 5 as disposed in a single straight line, but if desired they may be arranged upon a curved holder 18 in the circumference of a circle or other curve, as shown in Fig. 2, or upon a holder 19 having angularly disposed portions as shown in Fig. 3. Moreover, the lower ends of the trunk portions may be solid, or they may be recessed as suggested in Fig. 4 in order to save material.

The candle of Fig. 1 may be constructed in any manner known to the candle-making art. For example, one-half may be molded at a time, the wicks laid in place and the two halves united by the application of heat and pressure, or the

candle sections may be extruded simultaneously enclosing the wick or a partially enclosed wick and then shaped and united at the points of intersection.

The embodiment of the invention shown in Fig. 5 is intended for use wherever a circular pattern of illumination is desired. The multiple candle therein shown comprises a series of diverging branches 20 intersecting at points 22 and merging into converging branches 21, by pairs in a series of common vertices. Wicks 25 extend throughout the branches 20 and 21, intersecting at the tip and at each point 22 where the branches cross.

The branches are mounted upon a circular holder 24 and together comprise an annular ring having twelve points of initial ignition and burning with twelve separate flames when first lighted. As the candle burns down it will burn with a series of twenty-four flames, while the wicks in the branches 21 are burning, and then when the level of the intersecting points 22 is reached, it will again present twelve flames, and below that point a series of twenty-four separate flames.

In order to color the flames the wicks may be impregnated with any suitable chemical salt or surrounding with a wax or paraffin mixture containing such salts. In general calcium or lithium salts impart a red color to the flame, sodium a yellow and caesium a blue color thereto. The wicks may be uniformly treated with such color-producing salts or they may be treated with different salts in different parts of their length. For example, the wicks in the branch portions may be treated with a sodium salt and the wicks in the trunk portions with a calcium salt, so that when the number of flames changes their color also changes.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A candle having an integral body presenting a series of trunk portions each with diverging branches intersecting above the trunk portions, and a wick in each trunk portion which extends into said branches.

2. A candle having an integral body presenting a series of spaced trunk portions each with branches intersectin above the trunk portions, the said branches diverging upwardly above their points of intersection and again intersecting, and wicks extending continuously in the trunk and branch portions of the candle.

3. A candle having an integral body presenting a series of spaced trunk portions with branches interconnected to enclose substantially diamond-shaped openings, and wicks extending continuously throughout the branches.

4. A multiple candle having diverging and converging wick-enclosing branches merging and separating to present a variable number of effective wicks as the candle burns down.

5. A multiple candle having a series of wick-containing branches arranged in curved annular contour and merging and separating to present a variable number of effective wicks as the candle burns down.

6. A multiple candle having an integral body including straight trunk portions and diverging branches inclined with respect to said trunk portions, and intersecting at points intermediate between the trunk portions, and wicks in the trunk portions extending into each of said branches.

7. A candle having an integral body including trunk and branch portions enclosing wicks, the branch portions crossing and separating so that the candle as a whole will burn progressively with a variable number of flames.

8. A multiple candle having vertical trunk portions and branches inclined with respect to the trunk portions and intersecting each other at points equi-distant from the trunk portion, and wicks contained within said trunk portion and branch portion and intersecting in said branch portions.

9. A multiple candle having a plurality of sections inclined substantially to the vertical and intersecting each other at spaced points, and wicks contained within said sections and intersecting where the sections themselves intersect.

CAMERON TURNER.

Lyon & Lyon
ORDERED BY
42778
ORDER NO.

A.D. 1871, 13*th* JANUARY. N° 95.

Candles.

LETTERS PATENT to Arthur Charles Sterry, of Rotherhithe New Road, in the County of Surrey, Oil Refiner, for the Invention of "AN IMPROVEMENT IN THE MANUFACTURE OF CANDLES."

Sealed the 27th June 1871, and dated the 13th January 1871.

PROVISIONAL SPECIFICATION left by the said Arthur Charles Sterry at the Office of the Commissioners of Patents, with his Petition, on the 13th January 1871.

I, ARTHUR CHARLES STERRY, of Rotherhithe New Road, in the County of Surrey, Oil Refiner, do hereby declare the nature of the said Invention for "AN IMPROVEMENT IN THE MANUFACTURE OF CANDLES," to be as follows :—

The object of this Invention is to improve the appearance of paraffine and other semi-transparent candles.

In order to get a pearly transparent character of candle it is at present necessary to use paraffine very free from color, the cost in preparing which is great. I find however that while using a comparatively cheap

paraffine I can obtain a pearly white by simply employing in lieu of the ordinary wick a wick having a blue or violet color, which color subdues the cloudy character of the inferior paraffine, and greatly enhances the marketable value of the candle without deteriorating its illuminating property. The coloring of the wick may be effected by dyeing the same, or printing or coating the wick with the appropriate color or shade.

When it is desired to give to the candle a tinted hue, such, for example, as pink, I prepare the wick of the desired color and by its use a corresponding but subdued tint will appear to be diffused through the candle.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said Arthur Charles Sterry in the Great Seal Patent Office on the 13th July 1871.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, ARTHUR CHARLES STERRY, of Rotherhithe New Road, in the County of Surrey, Oil Refiner, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Thirteenth day of January, in the year of our Lord One thousand eight hundred and seventy-one, in the thirty-fourth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Arthur Charles Sterry, Her special licence that I, the said Arthur Charles Sterry, my executors, administrators, and assigns, or such others as I, the said Arthur Charles Sterry, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "AN IMPROVEMENT IN THE MANUFACTURE OF CANDLES," upon the condition (amongst others) that I, the said Arthur Charles Sterry, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six

methods described in Palmer's Specification, No. 2339, of 1864, Urbaine's Specification, No. 1698, of 1869, and my previous Provisional Specification, No. 3397, of 1870, and then filling in the passages thus formed with candle material of a colour different from that of which the candle is made. I also in some cases form both a central hollow passage, and surrounding this one or more spiral passages in the candle by introducing into the mould both a central cylindrical core and spiral wires, similar to those described in my above-mentioned Provisional Specification, which passages I then fill in with candle material, by preference of two or more different colours. Or I introduce into the mould two sets of spiral wires, one set within the other set, and by preference with the spirals running in opposite directions, and into the passages thus formed in the candle I run the colored candle material. In the two last-mentioned modifications the core or the one set of spiral wires is by preference introduced into the mould from below in the manner described in my before-mentioned Provisional Specification, while the other set of spiral wires is introduced from the upper end of the mould. I also sometimes combine with such internal passages filled in as described external channels or grooves filled in with coloured candle material in the manner described in the Specification to a Patent granted to myself and W. B. Nation, No. 2489, of 1867.

Another part of my Invention consists in adapting the machines for making single candles described in Newton's Specification, No. 2541, of 1857, and Pitman's Specification, No. 2556, of 1857, to the manufacture of double-wicked candles. For this purpose I arrange below the rising platform of those machines two wick bobbins to each candle mould, and I pass the two flat plaited wicks up through the hollow tube carrying the moveable mould for the tip of the candle, and in such moveable moulds I form two flat parallel apertures corresponding in configuration with the transverse section of the wicks, and in position with that which it is required that the wicks shall assume in the candle; the wicks are passed through such apertures in such manner that the same sides of the plait face each other, and they are held in the same parallel positions back to back a short distance apart throughout in the candle mould by means of the candles previously made, which are held in the usual clamps at the top of the machine, a tension being put upon the wicks from below, in order to insure their being held in a perfectly stretched and parallel position, either by causing the wick bobbins to turn with

friction (produced by springs or other suitable known means), or by causing the wicks before entering the moulds to pass through slits in a piece of india-rubber or other suitable material capable of exerting a pressure upon the wicks as they pass through. The candle material having been run in and solidified, the candles are raised up out of the moulds and into the clamps in the ordinary manner, thereby at the same time drawing the lengths of wick for the next candle through the mould; the moveable mould for the tip in descending and passing with its aperture before mentioned over the wicks insure these being held in a perfectly parallel and stretched condition in the mould, such as is required for causing the wicks in burning to bend outwards away from each other in a manner well understood. I also adapt such aforesaid candle machines for making candles with three or more wicks, by arranging a corresponding number of wick bobbins to each candle mould, and by forming a corresponding number of apertures in the moveable mould for the tip in a similar manner to that described with reference to the two-wicked candles.

SPECIFICATION in pursuance of the conditions of the Letters Patent filed by the said Arthur Field in the Great Seal Patent Office on the 17th July 1871.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, ARTHUR FIELD, of the Firm of John, Charles, and John Field, of Upper Marsh, Lambeth, in the County of Surrey, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Eighteenth day of January, in the year of our Lord One Thousand eight hundred and seventy-one, in the thirty-fourth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Arthur Field, Her special licence that I, the said Arthur Field, my executors, administrators, and assigns, or such others as I, the said Arthur Field, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "IMPROVEMENTS IN CANDLES, AND IN APPARATUS

FOR MANUFACTURING THE SAME," upon the condition (amongst others) that I, the said Arthur Field, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said Arthur Field, do hereby declare the nature of the said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement thereof, reference being had to the accompanying Sheet of Drawings, and to the figures and letters marked thereon, that is to say:—

One part of my Invention consists in manufacturing candles of ornamental appearance by first making candles of paraffin, ozokerit, or other transparent or semi-transparent materials with straight, longitudinal, or spiral passages formed therein according to either of the methods described in Palmer's Specification, No. 2339 of 1864, Urbain's Specification, No. 1698 of 1869, and in the Specification to my Patent, No. 3397 of 1870, and then filling in the passages thus formed with candle material of a colour different from that of which the candle is made. I also in some cases form both a central hollow passage, and surrounding this one or more spiral passages in the candle by introducing into the mould both a central cylindrical core and spiral wires similar to those described in my above-mentioned Specification, which passages I then fill in with candle material by preference of two or more different colours. Or I introduce into the mould two sets of spiral wires, one set within the other set, and by preference with the spirals running in opposite directions, and into the passages thus formed in the candle I run the coloured candle material. In the two last-mentioned modifications the core or the one set of spiral wires is by preference introduced into the mould from below in the manner described in my before-mentioned Specification, while the other set of spiral wires is introduced from the upper end of the mould. I also sometimes combine with such internal passages filled in as described external channels or grooves filled in with coloured candle material in the manner described in the Specification to a Patent granted to myself and W. B. Nation, No. 2489 of 1867.

Field's Improvements in Candles.

Another part of my Invention consists in adapting the machines for making single-wicked candles described in Newton's Specification No. 2541 of 1857, and Pitman's Specification No. 2556 of 1857 to the manufacture of double-wicked candles. For this purpose I arrange below the rising platform of those machines two wick bobbins to each candle mould, and I pass the two flat plaited wicks up through the hollow tube carrying the moveable mould for the tip of the candle, and in such moveable mould I form two flat parallel apertures corresponding in configuration with the transverse section of the wicks, and in a corresponding position with that which it is required that the wicks shall assume in the candle. The wicks are passed through such apertures in such manner that the same sides of the plait face each other, and they are held in the same parallel positions, back to back, a short distance apart throughout, in the candle mould by means of the candles previously made, which are held in the usual clamps at the top of the machine, a tension being put upon the wicks from below in order to insure their being held in a perfectly stretched and parallel position either by causing the wick bobbins to turn with friction (produced by springs or other suitable known means) or by causing the wicks before entering the moulds to pass through slits in a piece of india-rubber or other suitable material capable of exerting a pressure upon the wicks as they pass through. The candle materi having been run in and solidified the candles are raised up out of t moulds and into the clamps in the ordinary manner, thereby at the sa time drawing the lengths of wicks for the next candle through t mould. The moveable mould for the tip in descending and passing wi its apertures before mentioned over the wicks insure these being held i a perfectly parallel and stretched condition in the mould, such as is required for causing the wicks in burning to bend outwards away from each other in a manner well understood. I also adapt such aforesaid candle machines for making candles with three or more wicks by arranging a corresponding number of wick bobbins to each candle mould, and by forming a corresponding number of apertures in the moveable mould for the tip in a similar manner to that described with reference to the two-wicked candles.

Figures 1 to 5 on the accompanying Sheet of Drawings shew various designs of candles ornamented according to the first before described part of my Invention. Figure 1 shews an elevation and plan of a transparent semi-transparent candle having two internal helical passages A, A,

formed therein according to my before-mentioned Patent No. 3397 of 1870, which passages are filled in with coloured candle material as shewn. Figure 2 shews a candle having straight internal passages B, B, formed therein according to Urbain's Patent, No. 1698 of 1869, or Palmer's Patent, No. 2339 of 1864, which passages are filled in with coloured material. Figure 3 shews a candle having a central passage C formed therein, which is filled in with coloured material. Figure 4 shews a candle having a central passage C, and surrounding this two helical passages A, A, which are filled in with candle material either of the same colour or of different colours, as shewn. The helical passages may in this case be formed by the introduction of helical wires through the lower end of the mould as described in my said former Patent, while the central passage may be formed by the introduction of a core from the top of the mould, or the core may also be introduced from the bottom of the mould. Figure 5 shews a candle with a central passage C. filled in with coloured material and with external helical grooves D, D, also filled in with coloured material according to Field and Nation's Patent, No. 2489 of 1867.

Figure 6 shews a part longitudinal section of a candle machine constructing according to Newton's and Pitman's Patents as aforesaid, and adapted to the manufacture of candles with two wicks according to the second before-described part of my Invention.

The pistons E of the candle moulds F have two small apertures *e*, *e*, of a size and configuration corresponding with that of the two wicks G, G, (shewn in brown lines,) which pass from the two bobbins H, H, up through the piston rod E^1 and through the said apertures into the mould, the wicks being held centrally in the moulds by means of the previously made candle I held in the clamps J in a similar manner to the ordinary machines of this description. In order to insure the wicks being held in a perfectly stretched and parallel position in the mould while the candle material is poured in, a tension is put upon the wicks from below by causing them to pass between two strips of india-rubber K held in a plate L fixed below the ordinary rising platform M, which strips are pressed together so as to afford the required degree of resistance to the passage of the wicks by means of clips M, the pressure of which is regulated by the screws O, as shewn more clearly in the enlarged details of Figure 7. The wicks G are passed through the india-rubber strips, and the holes *e*, *e*, in the piston E in such manner that the same sides of

the plait face each other, so as to insure both wicks turning outwards in burning. The piston E in descending in the mould after having raised the finished candle I into the clamps J passes with its apertures *e* over the wicks G, and thus insures their parallel position in the mould ready for the manufacture of the next candle.

Having thus described the nature of my Invention, and in what manner the same is to be performed, I wish it to be understood that I am aware of the arrangement of machinery or apparatus for making two-wicked candles described in Palmer's Patent No. 12,077, dated 28th July 1848, and I in no way claim such arrangement; but what I claim is,—

First. Ornamenting transparent or semi-transparent candles by forming therein internal straight or helical passages or a combination of internal and external passages, and filling in such passages with coloured candle material, substantially as herein-before described.

Second. Adapting candle machines constructed according to Newton's and Pitman's Patents aforesaid to the manufacture of candles with two or more wicks by providing two or more wick bobbins to each candle mould, and by forming two or more apertures in the piston for the passage of the wicks, such wicks being held centrally in the mould by the candles previously made and having a tension applied to them below the candle moulds, substantially as and for the purposes herein-before set forth.

In witness whereof, I, the said Arthur Field, have hereunto set my hand and seal, this Thirteenth day of July, in the year of our Lord One thousand eight hundred and seventy-one.

ARTHUR FIELD. (L.S.)

LONDON:
Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1871.

Ascough's Improvements in the Manufacture of Candles.

In the Specifications of these Inventions are described certain improvements in the manufacture and composition of wick materials, candle wicks, and candle cores for dips, and other candles and tapers, as well as various improvements in the apparatus to be employed in the manufacture of the same. And in carrying out my improvements I have found that they are capable of important additions and much further developement, resulting in my present Invention.

I will proceed to describe first, my improvements in the production and manufacture of wick materials, candle wicks, candle cores and tapers, and I shall also refer to the fatty or other compositions or solutions with which my improved wicks and wick materials may be saturated wholly, or in part, or coloured, or into which they may be dipped, and any improvements in candle wicks, wick materials and candle cores, or tapers have for their object principally more perfect combustion of the wicks in burning, the absorption of the liquid fat from the cups of the burning candles, and the consequent production of snuffless and non-guttering candles with increased brillancy of the light thereform.

As stated in the Specification of my Patent, dated March 21st, 1870, to produce a snuffless quality and clearness of flame in the wicks, I use wool or other animal fibre, and I now find that the most valuble of such fibres for candle and taper wicks is silk.

For tallow, palm oil, and other fats of low melting point, I manufacture very absorbent wicks from suitable cotton combings, cardings, drawings or doublings, by preference however I use the combings from the finest quality of Sea Island cotton made into strands for threads, and platted with three to four plaits in each inch of wick and unbleached, alone or mixed with the cardings from any woven fabrics, or with silk, wool, fur, or other animal fibre. Or I take ordinary soft tape, or round, circular, or flat lamp wicks, by preference such as are sewn or woven with silk or other animal fibre, and dress or immerse them in any of the compositions herein-after named. I make use of any wick substances made into suitable shape, and when carded or scraped upon the one side or edge only such wicks will turn out of the flame.

A homogeneous and very absorbent wick of wadding I make by cutting such wadding into suitable widths, and the usual backing to such wadding will cause the wicks to turn out of the flame when burning; or I draw soft cotton wool, with or without the addition of

silk or other animal fibres, into suitable strands, and pass a thin coating of any suitable solution, such as that of gum resins or other substances, as mentioned in my Specification of December 15th, 1870, or any suitable varnish or similar composition along one side or edge thereof to bring the wick out of the flame.

If I wish to increase the clearness of the flame and produce colored wicks in suitable contrast to the candle composition, I dip such wicks in any of the compositions herein named, or I saturate or dye the wicks or parts of such wicks black or of any suitable color, by preference with aniline dyes.

By another method I increase the illuminating power of the wicks by dipping or saturating them wholly or in part into any of the hydrocarbons, as shale spirit, paraffin, or in any bituminous or carbonaceous product, such as those described in the Specification of my Patent, dated December 15th, 1870, or gas or vegetable tar in colored solutions of the gum resins, as varnishes, or in any distillate, as alcohol, or in cotton, lard, or other suitable oil; and a cheap form of such wick is hemp saturated with pitch or tar, known as "torch hemp," and in combination with ordinary wicks or more especially with those herein mentioned I produce candles with brown, black, or mixed wicks which give a very large flame. The flames of candles, particularly those made of distilled materials, are rendered much brighter by the addition of any metallic body, I therefore employ certain metals in a finally divided state, as in granules, powder or rubbings, and the wire or tape of many of such metals may be used, and I find that magnesium gives a most brilliant white flame. Or I take the oxides or other salts of certain metals, or the salts of metallic earths, and rub, triturate, or grind them with any hydrocarbons, bituminous, carbonaceous, resinous, alcoholic, or oily products, and saturate or dress one edge or side with such metallic composition, or I dip the wicks therein, or brush them with black or colored varnish containing metallic colors. Or I take metallic rubbings or divided particles of metal as found in the cotton or other waste of cotton spinning mills or factories in the waste greases, or oil from locomotives and other carriages, or other waste impregnated with metallic particles, and dress or dip the wicks therein, and such wicks will be grey, brown, or nearly black.

To produce candles with two platted wicks, each to turn outwards in opposite directions in the flame, I wind such wicks with the plaits

running from the inside upwards and outwards upon two narrow serrated or toothed rods or bars upon a frame, upon the edges of which the wick can be doubled over, reversed, and secured, so that the plaits on each side will run upwards and outwards. If I wish the wicks in burning to turn inwards I merely reverse this operation so that the plaits shall run from the outside inwards and downwards. And candles with two wicks other than platted, with or without dressing, are made in a similar manner by keeping both dressed sides or edges turning toward or away from each other.

For pairs of candles all the wicks may be drawn through the usual wick cutting machine, but if desired to produce candle cores or tapers for subsequent dipping without using the wick cutting machine, I wind them on a combination of two of my improved rods or on a frame of requisite depth for the required length of wick, and I dip the rods or frame in any suitable core or taper composition, and then pass a knife along to divide the lower series.

I make dip or dip moulded candles on the argand principle to produce great light by supplying atmospheric air within the flame; for this purpose, by preference, I take circular wicks and mount them on or pass through them suitable rods or tubes, and dip the whole to form candles with parallel wicks or wicks in a circle or other position after dipping; the rods or tubes being withdrawn there will be open spaces within such wicks. I dip, immerse, or brush over candles of any description with paraffin or other hydrocarbons, and I produce a superior outer coating which will improve the appearance of the candles, and if desired I colour such hydrocarbons, or I use black or colored paints or varnishes, and produce black candles or candles with any other outer colored surface.

I may observe that many of the wick materials herein mentioned are applicable for mixture with the candle composition, and I find that the admixture of the distilled solid hydrocarbons with ordinary non-distilled dip chandlers' meltings produce an improved candle composition.

I also make homogeneous candles without distinctive wicks by mixing any of the candle wick and other materials and compositions mentioned herein with carbonaceous or other suitable substances, as wood sawdust, coal, or charcoal, and the flame produced will be large, and may be increased by making the composition porous for the circulation of air, and

with the addition of perfumes the candles will be "pastile" or incense candles, and the flame may be colored with any suitable substances for the production of colored flames.

In the adjustment, form, and arrangement of the rods, bars, and covers for producing pairs or twin candles, I make such rods, bars, and covers of wood, metal, or other suitable substances, and reverse them if needed in the working, so that the covers act as grooves and carry the wicks, the rods becoming weights to keep the wicks in position, and in all cases where the dipping is performed by hand they have suitably shaped blocks to fit the ends; or I can dispense with hand blocks and hold the rods, bars, or covers firmly together by any suitable means applied to the ends or along the sides thereof. To prevent my improved covers lifting off or displacing the wicks when removed I perforate them with suitable holes or air spaces, or I make the covers wholly or in part of perforated metal, wire, or other latticing, or I form concave or convex rods, bars, or covers, or rods or bars with longitudinal, lateral or oblique corrugations or projections, between which the wicks can be firmly held, or T form the rods or bars with a central projection, and make the cover shaped to fit the same, or triangular or polygonal sided rods or bars similar to those illustrated in my before-mentioned Specifications, and with appropriate covers, or I use flat rods or bars with double T shaped covers. I also form open frame rods having latticing or meshes of suitable material and employ the ordinary chandlers' rods or any of those described as the weight rods. And to adapt the ordinary circular rods for dipping plaited wicks singly I attach to the upper ends of the wicks loops of wire, string, or thread to be passed over such rods. And I purpose using any of the altered forms of rods, bars, or covers I have specified with any of those described in my two former Specifications, and to which they may be applicable for the purpose of carrying pairs of wicks and securely holding them in position during dipping or dip moulding.

In the Specification of my Patent of March 21st, 1870, as shown at Figs. 38 & 39 of the Drawings an arrangement of rods or bars or frame for winding the wicks for dipping, and I now propose to use a somewhat similar winding machine but which is more effective for its purpose by means of a horizontal frame revolving upon its axis, the upper and lower bars of such frame having if necessary grooves, hooks, or studs, serrates, or teeth, upon which the wicks become engaged and fixed, and

such frame being removable for dipping with the wicks upon it, the wicks being afterwards cut through, or previous to the dipping if preferred, or the upper bar only may be removeable for dipping wicks in pairs for twin candles, and such upper bar may be one of the rods, bars, or covers before described.

To keep the wicks straight, parallel, and even in the dipping I immerse the lower ends, once, twice, or more times to the extent of a few inches only into the candle composition, so that lumps or knobs are formed at the ends of such wicks, or I attach to the ends of the wicks small pieces of lead or other heavy substances, which may be dipped with and remain in the candles, or I attach any suitable kind of weights to each wick or to two or more wicks, and which may be removed before finishing the candles. And if the I wish to make candles with several wicks or with the strands of wicks kept parallel, I pass such wicks in an open position over the rods, bars, covers, or frames, and in the first or second dipping the dipper will pass his fingers straight down them, or keep them straight and parallel by using suitable flat clamps or other weights, as before described. Or I may draw the candle wicks or cores through any suitable orifice, as a diaphragem of india-rubber or similar material, or through latticing of cords, cane, or wire, or through combs, the teeth of which crossing each other will compress and straighten the wicks, or through laths of wood, or rollers, or perforated zinc, and such latticings, combs, laths, rollers, or perforated zinc may be made not only to straighten the cores of candles, but also to dip mould fashion or shape them into any suitable form in section. Or I may keep the wicks and cores straight by using supplementary or skeleton rods or bars arranged under those carrying the wicks, and which being shaped as desired, can be pulled down the cores or finished candles to impart any required shape or contour thereto. As before mentioned I can keep the candle wicks or cores straight by accumulating lumps of candle material at the bottom of the wicks or cores, or such lumps or knobs may be formed upon the candles in any stage of the dipping or dip moulding process, and they may be compressed or shaped into any required form or contour to fit any candle sconce, holder, or candlestick. Or I make tapered or other shaped cores or cones of paper, wood, thin metal, earthenware, or of other suitable substances for attachment by spikes or otherwise to the bottom ends of any kind of candles, such cores or cones being dipped with the candles to coat them with the composition, or they may be

following statement, reference being had to the Drawings hereunto attached, and to the letters and figures marked thereon, that is to say:—

My Invention refers for the most part to certain improvements upon or developments of former Inventions for which Letters Patent were granted to me bearing date respectively March 21st, 1870, and December 15th, 1870, each of the said Patents having a similar title to the above.

In the Specifications of these Inventions are described certain improvements in the manufacture and composition of wick materials, candle wicks, and candle cores for dips and other candles and tapers, as well as various improvements in the apparatus to be employed in the manufacture of the same, and in carrying out my improvements, I have found that they are capable of important additions and much further development, resulting in my present Invention.

I will proceed to describe first, my improvements in the production and manufacture of wick materials, candle wicks, candle cores and tapers, and I shall also refer to the fatty or other compositions or solutions with which my improved wicks and wick materials may be saturated wholly or in part, or colored, or into which they may be dipped, and my improvements in candle wicks, wick materials, and candle cores or tapers have for their object principally more perfect combustion of the wicks in burning, the absorption of the liquid fat from the cups of the burning candles, and the consequent production of snuffless and non-guttering candles with increased brilliancy of the light therefrom.

I may observe that the so-called snuffless wicks hitherto used in the manufacture of candles from chandlers' tallow and from other fats of a low melting point have been composed of tightly twisted yarns, threads, or of loose cotton waste yarns, often with cords, braids, or other fibres in the plaits, or with gimping, or other threads added to them. Such wicks are hard and not sufficiently absorbent, bend irregularly, and turn out of the flame too much, causing guttering so excessive that any advantage in comparative snuffless quality has been more than counterbalanced by the rapid consumption of the candles, and the unpleasantness caused by the guttering. The causes of these defects I trace mostly to the wick

cotton being in closely twisted or uneven threads, its absorbent nature impaired by bleaching, and the plaits too numerous in the wick.

In other cases snuffless tallow wicks so called have been made on the principle generally followed for the manufacture of wicks for composite, paraffin, wax, and other candles of a high melting point, and hence their failure in tallow and other fats of a low melting point, as the required conditions in these two classes of wicks are to a great extent the reverse of each other. The particles of all fats of a high melting point being comparatively small and light they are readily drawn upwards by the flame, and hence wicks for such candles may be, and are generally, closely plaited. The particles of tallow and of other fats of low melting point, on the contrary, are comparatively large, and require wicks made of very absorbent materials and very loosely plaited, so that the melted fat may be drawn quickly upwards by the capillary attraction acting within and through as well as around the wick. And such wicks in burning will take up the liquid fat from the cups of the candles readily, and the loose plaits will allow the atmosphere to permeate the wicks while burning, and thus a plentiful supply of oxygen being secured the candle flames will be large and bright, and the candles snuffless and non-guttering; further, when blown out there will not be any "smouldering" of the wicks, and sufficient will be left for instant re-lighting.

For tallow, palm oil, and other similar fats, I therefore manufacture such absorbent wicks from suitable cotton combings, cardings, drawings, or doublings, by preference from the finest quality of Sea Island cotton made into loose strands, threads, or doubled threads, by preference in the form technically known in the trade as "mendings" or "darnings," not confining myself however precisely to this form, as others nearly approximating will answer my purpose, and woven or plaited as shewn in an enlarged view in Figure 1 of the accompanying Drawings with one or more plaits in each inch of wick, and unbleached alone, or mixed with bleached threads, and with or without the addition of the metallic or other preparations mentioned herein-after.

To make twisted or parallel wicks in the ordinary way I add to the "mendings," "darnings," or other loosely spun or twisted threads, threads saturated or dressed with some of the metallic or other preparations named herein, and such wicks will give large bright flames, be nearly snuffless under ordinary conditions, but quite so in

coal mines and other places where currents of atmospheric air are strong.

Figure 2 shews such a wick with one red thread dressed with oxide of lead; Figure 3 is another such wick with two green threads saturated with acetate of copper.

For composite, paraffin, ozokerit, and other fats of high melting point I make wicks for candles, cores, tapers, and night lights of "mendings," "darnings," or other similar loosely spun or twisted threads, woven, plaited, or parallel, alone or in combination with the usual wick cotton, and with or without animal fibres, and if animal fibres be used I prefer threads of silk, and with or without the addition of any of the metallic or other preparations mentioned herein-after. Such wicks will absorb and take up the liquid fat from the cups of the burning candles readily, the candles will be snuffless and burn without guttering, and after being extinguished there will be no "smouldering," and sufficient wick will be left for immediate re-lighting; further, these wicks do not require saturation in any of the usual chemical solutions. Or, I take ordinary soft tape, or round, circular, or flat lamp wicks, by preference such as are sewn or woven with silk or other animal fibre, and dress one side or edge thereof, or immerse them in any of the compositions herein-after named, and such wicks are thus converted into snuffless mould or dip candle wicks.

I make use of any wick substances made into suitable shape, and when carded or scraped upon the one side or edge only such wicks will turn out of the flame, and be snuffless if one side or edge be dressed with any of the metallic compositions herein-after described.

A homogeneous and very absorbent wick of wadding I make by cutting such wadding into suitable widths, and the usual backing to such wadding will cause the wicks to turn out of the flame when burning; or I draw soft cotton wool, with or without the addition of silk or other animal fibres, into proper strands, and pass a thin coating of any suitable varnish or similar composition along one side or edge thereof to bring the wick out of the flame.

If I wish to increase the clearness of the flame and produce colored wicks in contrast to the candle composition, I dip such wicks in any of the compositions herein-after named; or I saturate or dye the wicks

or parts of such wicks black, or of any required color, by preference with aniline dyes.

By another method I increase the illuminating power of the wicks by dipping or saturating them wholly or in part in gas or vegetable tar, or in colored solutions of the gum resins, as varnishes; and a cheap form of such wick is hemp saturated with pitch or tar, known as "torch hemp," and in combination with wicks herein mentioned I produce candles with brown, black, or mixed wicks, which give a very large flame.

The flames of candles, particularly those made of distilled materials, are rendered much brighter by the addition of metallic bodies, I therefore employ certain metals in a finely divided state, such as iron, copper, tin, lead, spelter, manganese, or magnesium, as in granules, powder, or rubbings, and the wire or tape of many of such metals may be used, and I find that magnesium gives a most brilliant white flame. Or, I take the oxides or other salts of such metals, and rub, triturate, or grind them with any hydrocarbous, bituminous, carbonaceous, resinous, alcoholic, or oily products; and saturate or dress one edge or side with such metallic composition, or I add saturated threads thereto, or I dip the wicks therein, or brush them with black or colored varnish containing metallic colors. Or, I take metallic rubbings or divided particles of metal as found in the cotton or other waste of cotton spinning mills or factories, in the waste greases or oil from locomotives and other carriages, or other waste impregnated with metallic particles, and dress or dip the wicks therein, or add dressed threads thereto, and such wicks will be grey, brown, or nearly black, and will give great light and be snuffless.

To produce candles with two plaited wicks, each to turn outwards in opposite directions in the flame, I wind such wicks, as shewn in Figure 4, with the plaits running from the outside upwards and inwards upon two bars (*a*, *b*,) of a frame; the top bar (*a*) is serrated or toothed for the wick to be doubled over, reversed, and secured thereupon, as seen in the enlarged view Figure 5, so that the plaits on each side of the wick will run upwards and inwards; and to keep the wicks parallel and straight in regular pairs I form upon the lower bar (*b*) studs or pins, upon which the wick can be looped, as shewn in Figure 4, at (*c*). The frame may be constructed in such manner that the sides or guage plates (*d*) and lower bar (*b*) may be removed after the early dippings, and the candles finished upon the upper bar (*a*) alone. Or, the lower

bar (*b*) may be serrated or toothed in a similar manner to the upper bar, so that the wicks instead of being continuous may be secured upon the bars in separate lengths; if I wish the wicks in burning to turn inwards I merely reverse this operation, so that the plaits shall run from the outside inwards and downwards, and, if desired to make candles with two or more parallel wicks I wind them side by side.

For pairs of candles all the wicks may be drawn through the usual wick cutting machine, but if desired to produce candle cores or tapers for subsequent dipping without using the wick cutting machine I wind them closely together on a combination of two of my improved rods, or on a frame such as shewn in Figure 6 of requisite depth for the required length of wick, and I brush over the one side with any of the metallic or other compositions named herein, or I dip the rods or frame in any suitable core or taper composition, and then pass a knife along a groove in the lower bar to divide the series, and the candle cores may be kept in this state for subsequent dipping.

I make dip or dip moulded candles on the argand principle, Figures 7 and 8, to produce great light by supplying atmospheric air within the flame, for this purpose by preference I take circular wicks such as (*e*), Figure 7, and mount them on or pass through them suitable rods or tubes, and dip the whole to form candles with circular or parallel sided wicks, or wicks of other suitable contour, and after dipping the rods or tubes being withdrawn there will be open spaces (*f*) within such wicks.

I dip, immerse, or brush over candles, candle cores, or tapers of any description with parafin or other hydrocarbons, and I produce a superior outer coating which will improve the appearance of the candles or tapers, and if desired I color such hydrocarbons, or I use black or colored paints or varnishes and produce black candles or candles with any other outer colored or parti-coloured surface, either plain or ornamental, by stencilling, lettering, or printing suitably applied.

I also make homogeneous candles without distinctive wicks by mixing any of the candle wicks and other materials and compositions mentioned herein with carbonaceous or other suitable substances as wood, sawdust, coal, or charcoal, and the flame produced will be large and may be increased by making the composition porous for the circulation of air; and with the addition of perfumes the candles will be "pastile" or

"incense candles," and the flames may be colored with any suitable substances for the production of colored flames.

In the adjustment, form, and arrangement of the rods, bars, and covers for producing pairs or twin candles I make such rods, bars, and covers of wood, metal, or other suitable substances, and reverse them if needed in the working so that the covers act as grooves and carry the wicks, the rods becoming weights to keep the wicks in position; this could be readily effected in using such a rod and cover as Figure 10, and in all cases where the dipping is performed by hand they have suitably shaped blocks to fit the ends, or I can dispense with hand blocks and hold the rods, bars, or covers firmly together by any suitable means applied to the ends or along the sides thereof, such as by clamps, springs, screws, nuts, pins, rivets, or bands.

To prevent my improved rods or covers lifting off or displacing the wicks when removed I perforate them with suitable holes or air spaces as seen in the various Drawings thereof, or I make the covers wholly or in part of perforated metal, as Figure 9, wire, or other latticing, or I form concave or convex rods, bars, or covers, Figures 11 and 12, or rods or bars with longitudinal, lateral, or oblique corrugations or projections Figures 13, 14, and 15, between which the wicks can be firmly held, or I form the rods or bars as seen in Figures 16 and 17 with a central projection, and make the covers shaped to fit the same, or the bar may be triangular, as Figure 18, or polygonal sided rods or bars similar to these illustrated in my before-mentioned Specifications may be employed and with appropriate covers, or I use flat rods or bars with double T shaped covers such as Figure 19.

I also form as represented in Figure 20 open frame rods having latticing or meshes of suitable material, and employ the ordinary chandlers' rods or any of those described, or rods of galvanized or other metal as the weight rods; and I purpose using any of the altered forms of rods, bars, or covers I have specified with any of those described in my two former Specifications, and to which they may be applicable, or any other suitable form of rods, bars, grooves, or covers without confining myself to their mere shape, the object of my improvements being to carry single or multiple wicks for producing candles in pairs, and to securely hold them in position during dipping or dip moulding.

Ascough's Improvements in the Manufacture of Candles.

In the Specification of my Patent of March 21st 1870 is shewn at Figures 38 and 39 of the Drawings an arrangement of the rods or bars or frame for winding the wicks for dipping, and I now propose to use a somewhat similar winding machine and represented in Figure 21 in side elevation consisting of a horizontal frame revolving upon or with an axis (*g*), the upper and lower bars (*h* and *i*) of such frame having if necessary grooves, hooks, or studs, serrates, or teeth, upon which the wicks become engaged and fixed, and such frame being removable for dipping with the wicks upon it, the wicks being afterwards cut through at their lower ends or previous to the dipping if preferred, to facilitate which a groove may be formed as shewn at (*k*) Figure 22, or the upper bar only may be removable for dipping wicks in pairs for twin candles, and such upper bar may be one of the rods, bars, or covers before described.

The winding machine is represented as having a frame travelling with its axis (*g*), and actuated by a handle (*l*), or a treadle or pulley may be used if preferred, the axis (*g*) is prolonged a sufficient distance beyond the winding frame, and as shewn is screwed for working in a wormed collar (*m*) so that the wick will be wound upon the frame at regular intervals apart, the screw being cut to allow of such distances with each revolution. Or the axis (*g*) may be an endless screw working in bearings at either end, the frame revolving and traversing thereupon in winding the wick.

Instead of cutting through the wicks at their lower ends as described I sometimes purpose cutting them through centrally for forming candles in pairs on the top and also the bottom bar, and the whole may then be dipped as a dipping frame for finishing the candles.

To keep the wicks straight, parallel, and even in the dipping I immerse the lower ends once, twice, or more times to the extent of a few inches only into the candle composition so that lumps or knobs are formed at the ends of such wicks, or I attach to the ends of the wicks small pieces of lead or other heavy substance which may be dipped with and remain in the candles, or I attach any suitable kind of weight to each wick or to two or more wicks, and which may be removed before finishing the candles; and if I wish to make candles with several wicks, or with the strands of wicks kept parallel, I pass such wicks in an open position over the rods, bars, covers, or frames, and keep them straight

and parallel, using weights or flat clamps such as shewn in Figure 23, and worked by suitable means. Or I may draw the candle wicks or cores through any suitable orifice as a diaphragm of india-rubber or similar material, or through latticing of cords, cane, or wire, as Figure 24, or through combs, the teeth of which crossing each other will compress and straighten the wicks, or through laths or clamps of wood, as Figure 23, or by rollers as shewn in Figures 25 and 26, or through perforated zinc as Figures 27 and 28, and such latticings, combs, laths, rollers, or perforated zinc will not only straighten the cores of candles but also by suitable shapes being cut or spaces left therein dip mould, fashion, or shape them into any suitable form in section by the candles being drawn or pressed through them. Or I may keep the wicks and cores straight by using supplementary or skeleton rods or bars, and such as illustrated in Figures 29 and 30 arranged under the rod carrying the wicks, and which being shaped as desired can be pulled down the cores or finished candles to impart any required shape or contour thereto, or the candles may be finished afterwards in the usual way, or colored as herein-before described.

As before mentioned I can keep the candle wicks or cores straight b accumulating lumps of candle material, such as Figure 31, at the botto of the wicks or cores or candles, and they may be compressed or shape into any required form, such as Figure 32, to fit any candle sconc holder, or candlestick; or I make tapered or other shaped solid hollow cores or cones of paper, wood, thin metal, earthenware, or other suitable substances, and such as Figures 33, 34, 35, 36, 37, and 3 for attachment either whole or in parts by spikes, compression, cohesi of the fatty matter, varnish, or other glutinous substances to the ends any kind of candles, and such cores or cones may be subsequently dipp with the candles to coat them with the composition, or they may brushed over with colored varnish or otherwise finished.

By another method I take any required number, as for instance four splints, lengths, or ribs of wood, or other suitable material, and attac them vertically around the ends of the candles by compression, adhesio or otherwise, so as to form ribs thereupon for fitting into any candlestic holder, or sconce, the candles being subsequently dipped or not as pr ferred. Or I leave a length of wick material upon the ends of t candles, or I take a separate piece of wick or other suitable materi

sufficient for wrapping around and enlarging such ends during manufacture.

To cause the fatty composition to set quickly I propose to pass the cores or candles from the dipping trough into or through a refrigerating chamber kept to any desired temperature by means of the usual cold producing mixtures, by sprays or currents of cold water, or other similar means.

Having thus described the object and nature of my said Invention, and the manner in which the same is practically to be carried into effect, I claim, without limiting myself to these precise details, the several improvements in the manufacture of candles, and in apparatus to be employed therein, substantially in manner as herein more fully set forth and specified.

In witness whereof, I, the said Jesse Ascough, have hereunto set my hand and seal, this Twentieth day of June, in the year of our Lord One thousand eight hundred and seventy-two.

JESSE ASCOUGH. (L.S.)

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PROVISIONAL SPECIFICATION.

Improvements in Night and other like Lights.

We, WILLIAM CHARLES SMITH, of White House, Red Bridge, Ilford, Manufacturing Chemist, and ALBERT PIDGEON, of 18, Winnifred Road, White Post Lane, Little Ilford, Engineer, both in the County of Essex, do hereby declare the nature of this invention to be as follows :—

The invention has mainly for its object improvements in night and other like lights with a view to retain the wick securely in an upright position during the entire period of burning, even in spite of side draughts or of undue heat. For this purpose we form the night or like light in two parts, the inner part being in the form of a separately made small candle which may conveniently be about ⅜ of an inch in diameter fitting a hole of corresponding size in the centre of the outer part. We form the central portion of the light of material having a much higher melting point than that of which the outer portion is made and we preferably make the central part of a different color to that of the outer part which in addition to giving an ornamental appearance may also be used to denote different qualities of material. The central portion has the wick passing centrally therethrough and said wick is at the lower end passed through a sustainer.

It will be readily understood that by the above described improvements the wick will be securely held by the comparatively hard material immediately surrounding it, notwithstanding that the material of the outer part of the light may be in a somewhat melted condition.

We would here remark that the method of manufacture above described may be employed apart from the use of materials having different melting points.

We would also remark that we are aware that wicks have heretofore been coated with high quality wax but the amount of wax used thereon has been very small and if a larger quantity of such high quality wax were employed it would make the night or other like light expensive to produce, but by our invention we are enabled to use a cheaper material to form the central candle like portion of the light.

Dated this 5th day of March 1897.

HARRIS & MILLS,
23, Southampton Buildings, London, W.C., Agents.

COMPLETE SPECIFICATION.

Improvements in Night and other like Lights.

We, WILLIAM CHARLES SMITH, of White House, Red Bridge, Ilford, Manufacturing Chemist, and ALBERT PIDGEON, of 18 Winnifred Road, White Post Lane, Little Ilford, Engineer, both in the County of Essex, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement :—

The invention has mainly for its object improvements in night and other like

with a view to retain the wick securely in an upright position during the period of burning, even in spite of side draughts or of undue heat.

In order that our invention may be clearly understood, we will proceed aided by the accompanying drawings fully to describe the same.

Fig. 1 is a plan of a night light constructed according to the invention and Fig. 2 a vertical section of the same.

We form the night or other like light in two parts, the inner part *a* being in the form of a separately made small candle, which may conveniently be about ¾ of an inch in diameter, fitting a hole of corresponding size in the centre of the outer part *b*.

We form the central portion *a* of the night light of material having a much lower melting point than that of which the outer portion *b* is made, and we preferably make the central part *a* of a different color to that of the outer part *b*, which, in addition to giving an ornamental appearance, may also be used to denote different qualities of material. The central portion *a* has the wick a^1 passing centrally therethrough, and said wick is, at the lower end, passed through a sustainer *c*.

It will be readily understood that by the above described improvements the wick a^1 will be securely held by the comparatively hard material *a* immediately surrounding it, notwithstanding that the material of the outer part *b* of the light may be in a somewhat melted condition.

We would here remark that the method of manufacture above described may be employed apart from the use of materials having different melting points, for the purpose of ornamentation only or to denote different classes of night lights.

We are aware that wicks have heretofore been coated with high quality wax, but the amount of wax used thereon has been very small, and if a larger quantity of such high quality wax were employed, it would make the night or other like light expensive to produce, but by our invention we are enabled to use a cheaper material to form the central candle-like portion of the light.

Having now particularly described and ascertained the nature of our said invention, and in what manner the same is to be performed, we declare that what we claim is :—

1. A night or other like light consisting of an inner part in the form of a small candle containing a wick fitting a hole of corresponding size in the outer part, substantially as herein shown and described and for the purpose stated.

2. A night or other like light consisting of an inner part in the form of a small candle fitting a hole of corresponding size in the outer part, the inner part being made of material having a higher melting point than that of the surrounding material, substantially as herein shown and described and for the purpose stated.

3. In a night light of the character claimed in Claims 1 and 2, forming the inner part of a different color from the outer part, substantially as herein shown and described and for the purpose stated.

4. A night light consisting of a central portion *a* containing a wick a^1, an outer portion *b*, and wick sustainer *c*, substantially as herein shown and described and for the purpose stated.

5. The improvements in night lights substantially as herein shown and described.

Dated this 6th day of December 1897.

HARRIS & MILLS,
23, Southampton Buildings, London, W.C., Agents.

Redhill: Printed for Her Majesty's Stationery Office, by Malcomson & Co., Ltd. 1898.

Fig. 1.

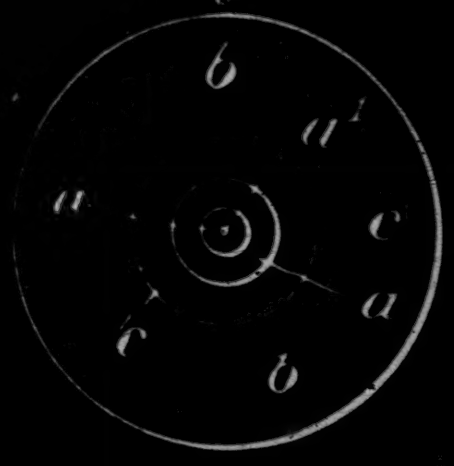
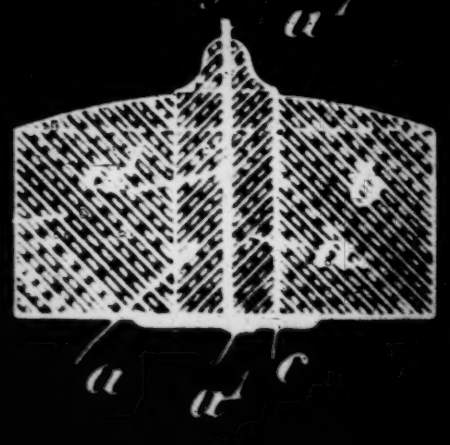


Fig. 2.



KAISERLICHES PATENTAMT.

PATENTSCHRIFT

№ 157209

KLASSE 23 d.

DR. O. HAUSAMANN IN HAMBURG.

Kerze mit farbigem Kern.

Patentiert im Deutschen Reiche vom 30. Juni 1903 ab.

Die vorliegende Erfindung besteht darin, daß Kerzen mit einem farbigen, ihre Dochte *a* umkleidenden Kern *b* versehen sind, welcher im gleichen Verhältnis wie die übrige Kerzenmasse schmilzt und für die Kerzen ein besonderes Merkzeichen bilden soll. Beispielsweise kann an solchem Kern die Herkunft oder das Besitztum der Kerze und dadurch ein widerrechtlicher Erwerb ohne weiteres festgestellt werden.

Zur Herstellung einer solchen Kerze wird der Docht vor dem Kerzengießen durch eine geschmolzene farbige Kerzenmasse und eine die äußere Form des Kernes bestimmende Lehre hindurchgezogen, so daß er mit dieser Masse bekleidet wird, welche an den Enden der Kerze farbig zum Vorschein kommt und sich auch während des Brennens dauernd von der Hauptkerzenmasse scharf unterscheidet.

Das Färben der Kernmasse geschieht mittels fettlöslicher Anilinfarben.

Die den Kern umgebende Masse des Kerzenkörpers kann weiß oder andersfarbig wie der Kern sein.

PATENT-ANSPRUCH:

Kerze, dadurch gekennzeichnet, daß sie mit einem farbigen Kern aus Kerzenmasse um den Docht versehen ist.

Hierzu 1 Blatt Zeichnungen.

BERLIN GEDRUCKT IN DER REICHSDRUCKEREI

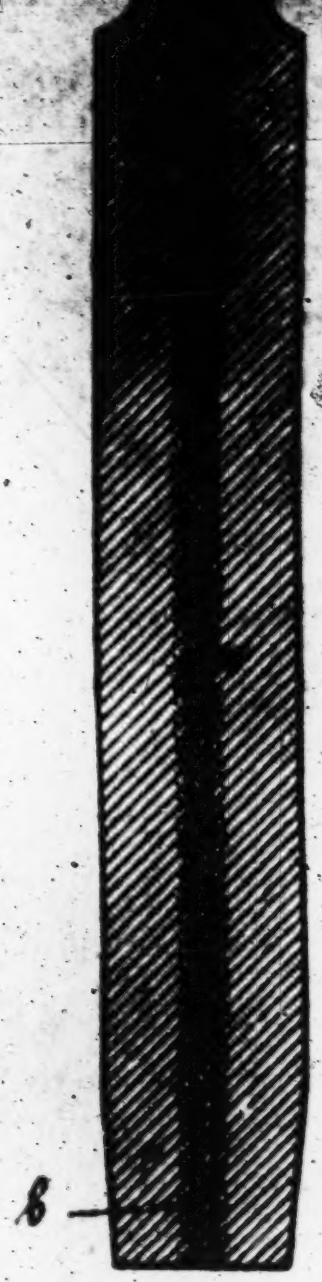
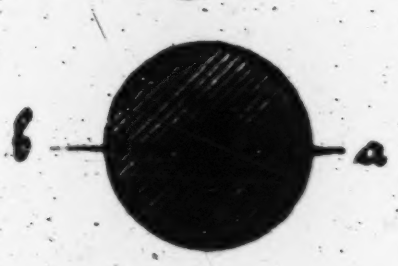


Fig. 2.



Zu der Patentschrift

№ 157202.

PHOTOGR. DRUCK DER REICHSDRUCKEREI

DEFENDANTS' EXHIBIT "B"

[Title of District Court and Cause.]

STIPULATION

It Is Stipulated by and between the parties hereto through their respective counsel that it was known in the candle making art prior to the invention of Wilson of the invention covered by United States Letters Patent No. 2,464,361, that metallic salts and aniline dyes were useful in the coloring of candles, no reference being intended to the particular manner of coloring.

It is further stipulated that attached hereto and marked Exhibit "A" is a true and correct translation of German Patent No. 157,209 to Hausamann.

/s/ H. CALVIN WHITE,
Attorney for Plaintiff

LYON & LYON,
/s/ By CHARLES G. LYON,
Attorneys for Defendants.

It Is So Ordered this 20th day of August, 1953.

/s/ PEIRSON M. HALL,
United States District Judge.

EXHIBIT "A"

(Translation)

Imperial Patent Office—Patent Description No. 157,209—Class 23 d

Dr. O. Hausamann in Hamburg

Candle with Colored Core

Patented in the German Reich as of June 30, 1903.

This invention consists of the fact that candles are provided with a colored core b, surrounding their wicks a, which melts in the same ratio (verbatim) as the remaining candle mass, and which is intended to lend a characteristic feature to these candles. For example the origin and the ownership of such a candle can thusly be determined and illegal acquisition easily recognized.

In order to manufacture such a candle the wick is drawn, prior to the moulding of the candle, through a molten colored candle mass as well as a void mould determining the outer form of the core, so that it is covered with this mass which appears colored at the ends of the candle, and which differs sharply, also during burning, from the main candle mass.

The coloring of the candle mass is accomplished by means of fat soluble aniline dyes.

The candle mass surrounding the core may be white or any color other than the core.

Claim

Candle, characterized in that it is provided with a colored core of candle mass surrounding the wick.

CD1033

MATTHEW BENDER & COMPANY MB-57

MICROCARD

TRADE MARK ®

FIG. 6.

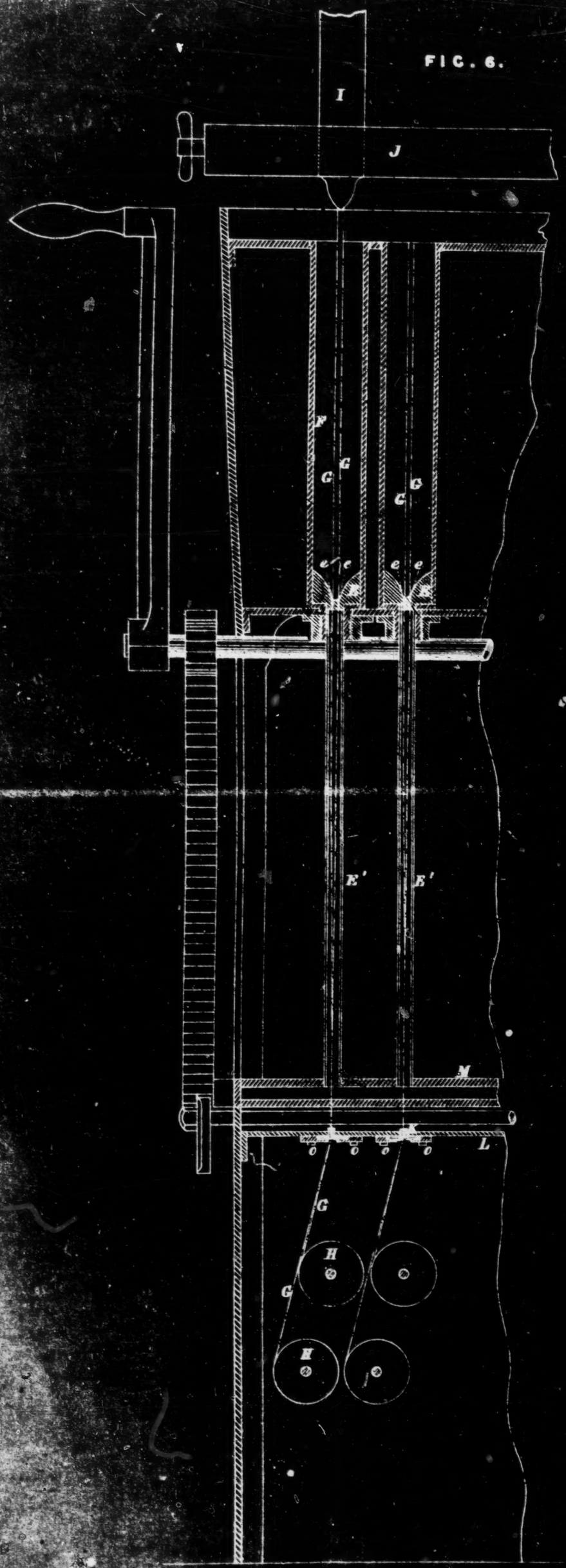


FIG. 1.

FIG. 2.

FIG.

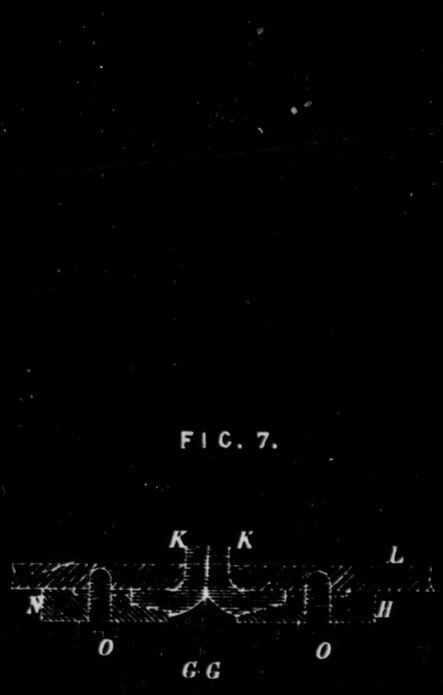


FIG. 7.

P. 369

London Printed by George E... and William Spottiswoode...

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

FIG. 5.

P. 369

Drawn on Stone by Maltby & Son.

N°3478.
SPECIFICATION.

FIG. 2.

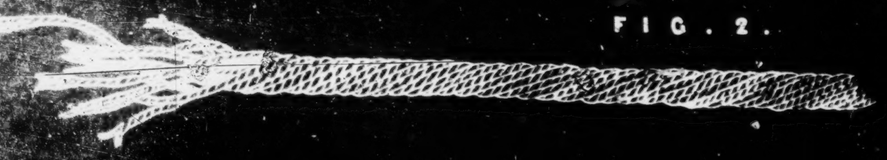
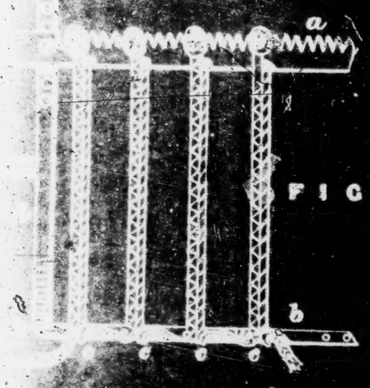


FIG. 1.

FIG. 22



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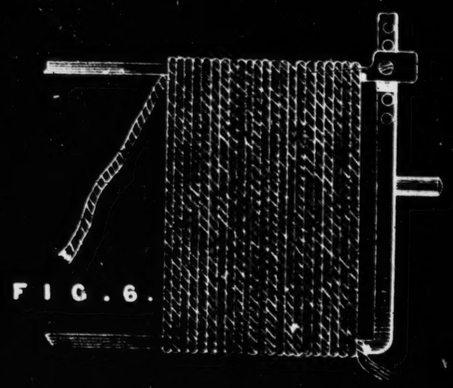


FIG. 6.

FIG. 5.

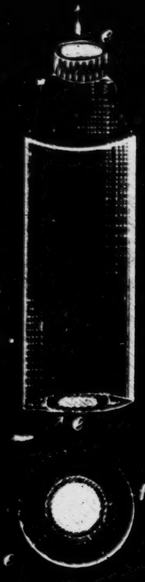


FIG. 7.

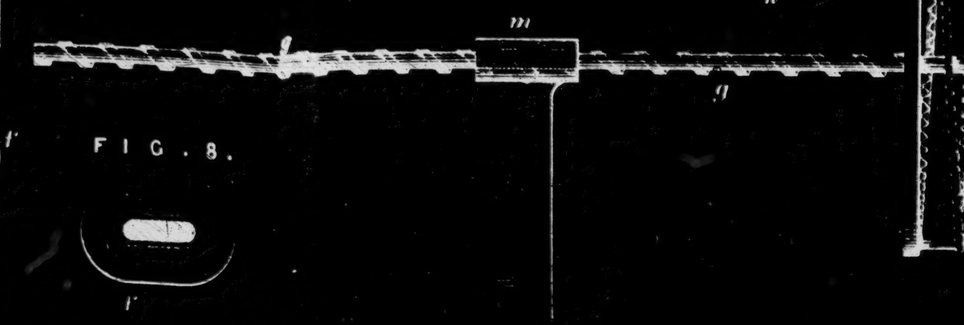


FIG. 8.

FIG. 9.

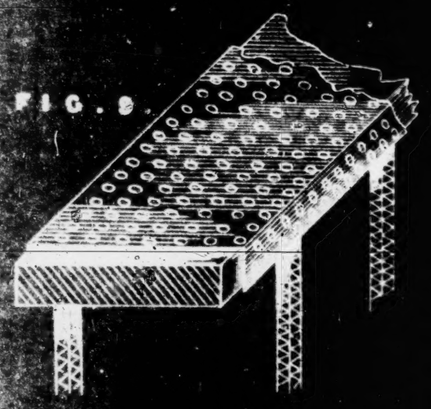
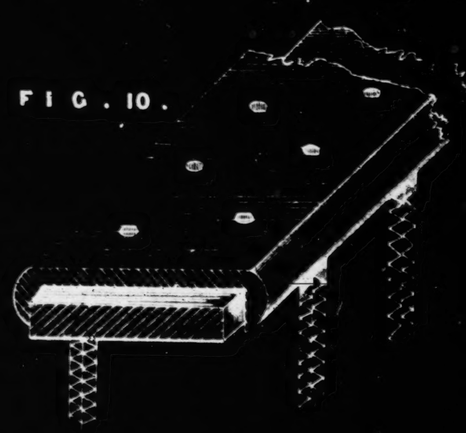


FIG. 10.



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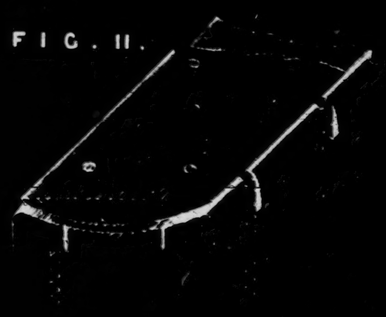

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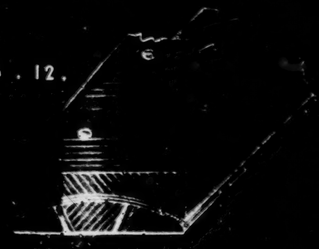

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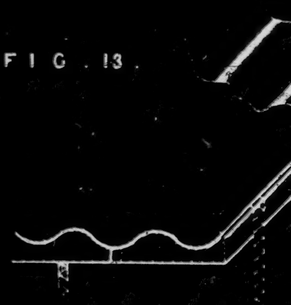

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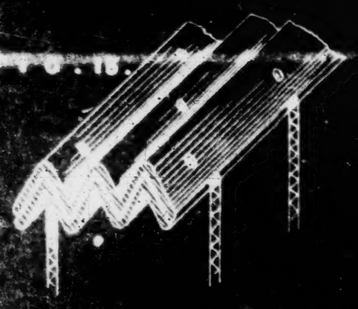

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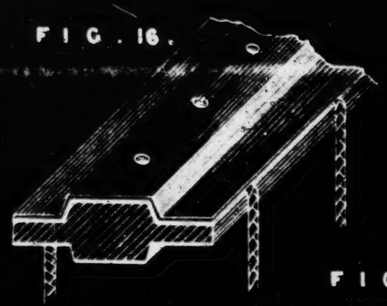


FIG. 17.

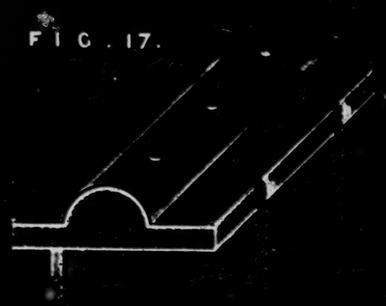
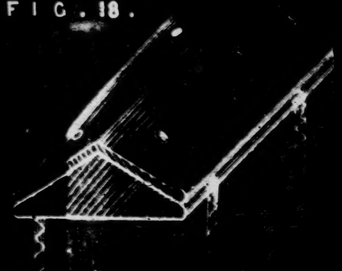


FIG. 18.



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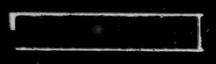

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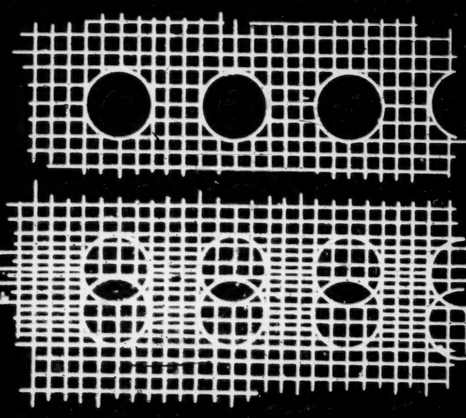

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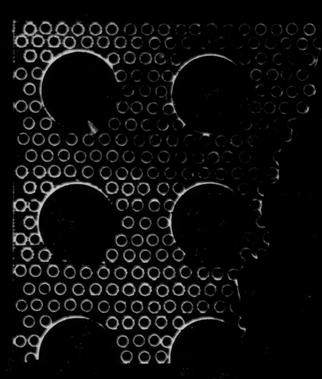
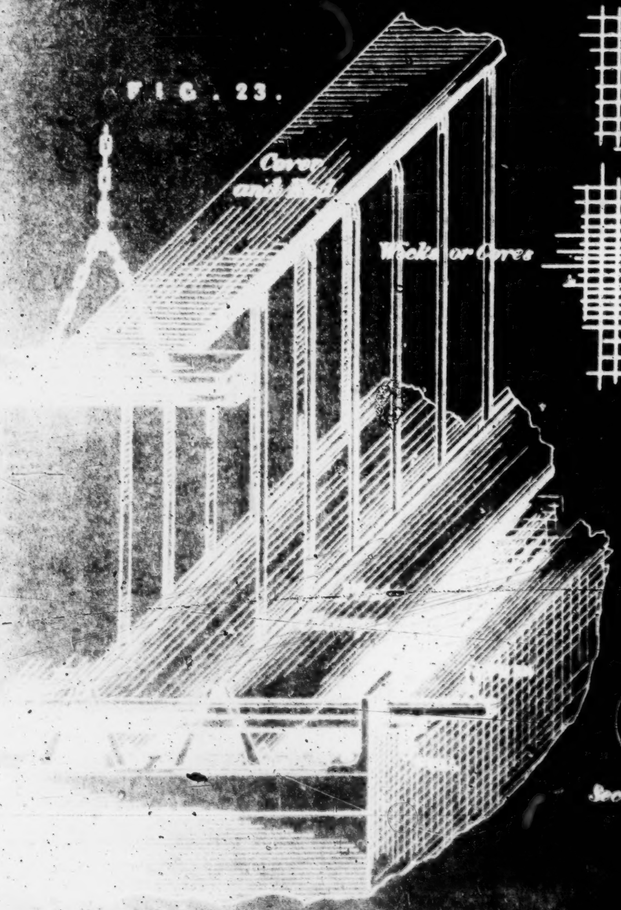


FIG. 23.



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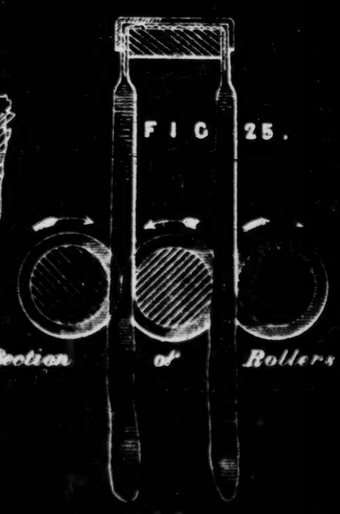

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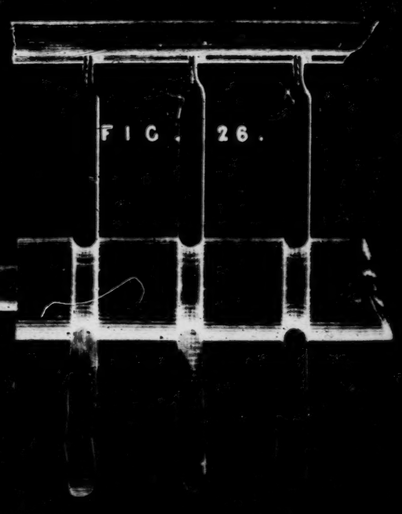

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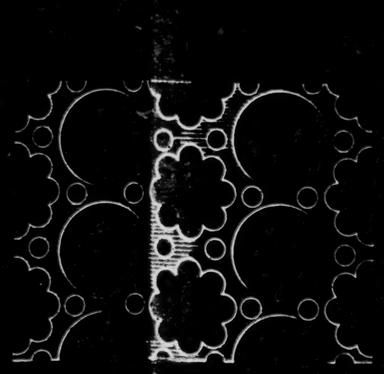

FIG. 30.

FIG. 29.

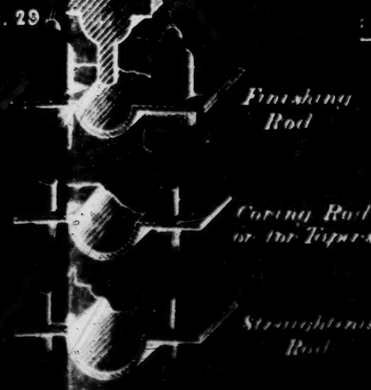

FIG.

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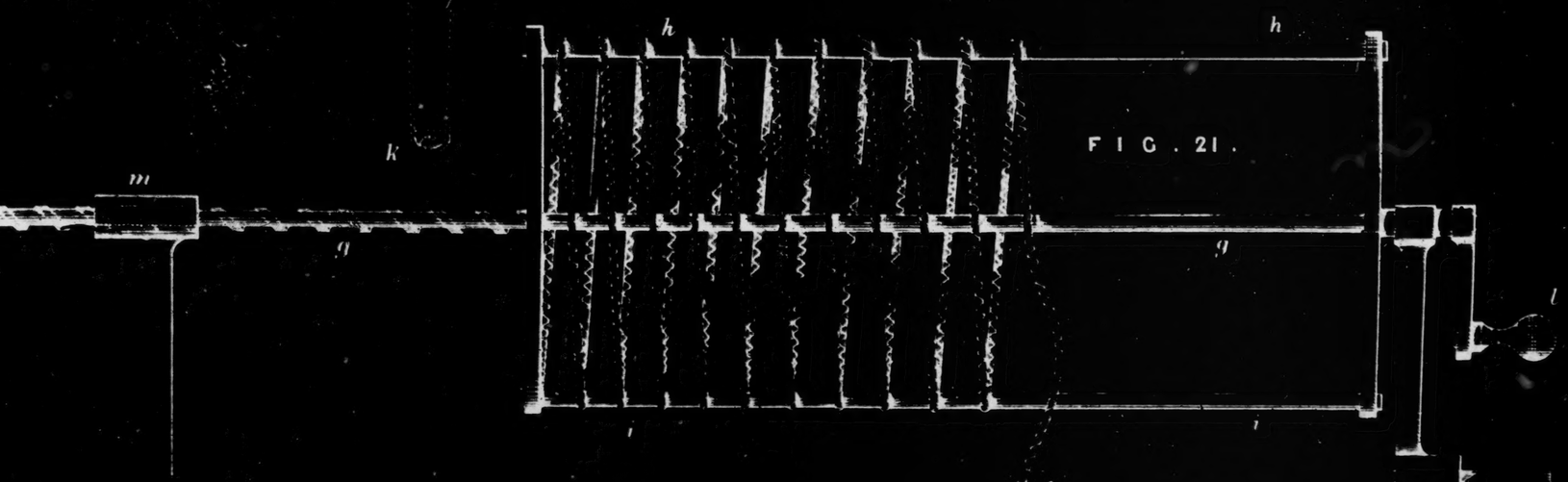
FIG. 22.

FIG. 3.



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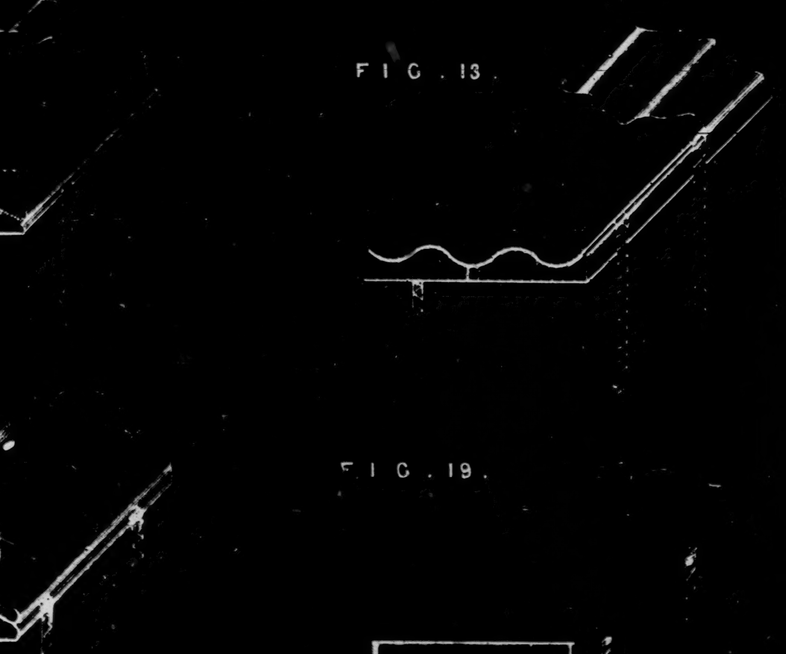

FIG. 13.

FIG. 14.

FIG. 19.

FIG. 20.

FIG. 28.

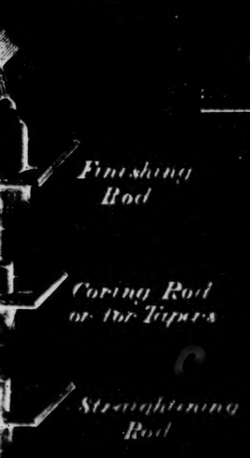

FIG. 30.

FIG. 33.

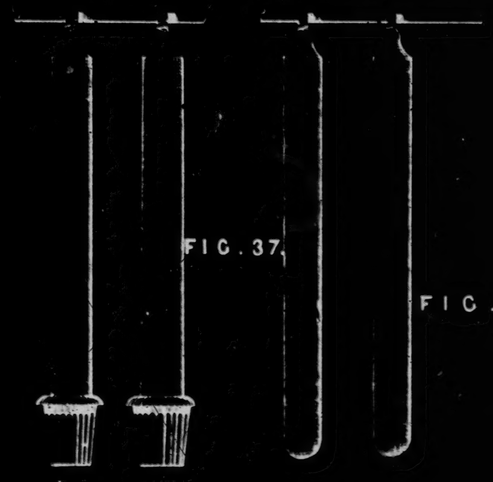

FIG. 37.

Section

FIG. 38.

FIG. 32.

FIG. 31.

FIG. 34.

FIG. 35.

FIG. 36.

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